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No. 116

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CONTENTS

I. GENERAL INFORMATION

National

PRC Attempting To Develop Loess Plateau
(XINHUA, 14 Dec 80) 1

Distribution of State Farms
(ZHONGGUO NONGKEN, 24 Apr 80) 2

Guangxi Hosts National Seminar on Forestry Economic Theory
(Guangxi Regional Service, 20 Nov 80) 4

Application of Economic Laws to Development of Soybean Production Urged
(Wu Leng; NONGYE JINGJI WENTI, 23 Jul 80) 5

Briefs
Pelts, Hair Procurement Up 12

Anhui

Briefs
Oil-Fat Procurement 13
Lake Development 13
Fengyang Country Grain 13
Lingbi County Grain, Oil 13
Luan County Grain Procurement 13
Fengyang County Agriculture 14
Tianchang County Agricultural Production 14

Gansu

Briefs
Grain, Oil Harvest 15
Grain Harvest 15

Guangdong

Conference Held on Procurement, Marketing Grain
(Guangdong Provincial Service, 26 Nov 80) 16

Briefs
Edible Oil Procurement 18
Winter Cultivation 18
Hainan Tropical Crop Production 18
Hainan Agricultural Meeting 19
New Tropical Crops Institutes 19

Guizhou

Briefs
Guizhou Peasants' Income 20

Hebei

Beijing Weather Station Reviews Local Conditions
(XINHUA, 11 Dec 80) 21

Briefs
Grain Circular 22
Grain, Edible Oil Procurement 22

Heilongjiang

Briefs
Farm Output Figures 23
Cash Crops Expanded 23

Henan

Briefs
Cotton Procurement 24
Agricultural Modernization Meeting 24
Grain Procurement 24
Water Conservancy Meeting 24
Grain Procurement Quota Overfulfilled 24

Hubei

Briefs
Farmland Capital Construction Meeting 25
Agricultural Zoning Meeting 25
Changjiang River Control 25

Hunan

Briefs
Urgent Forestry Instructions 26
Timber Forum 26
Oil-Bearing Beans Production 26

Jiangsu

Briefs

Cocoon Harvest 27
Agricultural Zoning 27
Winter Crops 27
Huaiyin Prefecture Cotton 27
Bumper Peanut Harvest 27
Ganyu County Peanuts 27

Jiangxi

Briefs

Agricultural Zoning Meeting 28

Jilin

'JILIN RIBAO' Reporters Interview Zhang Gengcheng
(Jilin Provincial Service, 27 Nov 80) 29

Briefs

Sugarbeet Harvests 31
Fusong County Harvest 31

Liaoning

Briefs

Autumn Afforestation 32

Nei Monggol

Briefs

Dairy Farms 33
Oil-Bearing Crops 33
Afforestation Projects 33
Xingan Oil-Bearing Crops 33
Rat Extermination 33
Agriculture-Livestock Farms 34
Afforestation, Tree Planting 34

Qinghai

Briefs

Grassland Capital Construction 35
Seed Production 35
Grain Output Up 35

Shaanxi

Briefs

Cotton Procurement 36
Milch Goat Raising 36
Yanan Prefecture Bumper Harvest 36

Shandong

Reasons for Greater Accumulation of Farm Debts, Less Effective Farm Loans
(NONGYE JINGJI WENTI, 23 Jul 80) 37

Briefs
Shandong Reaps Bumper Cash Crops 39
Economic Crops 39
Cotton-Sesame Harvest 39
Autumn Grain 39
Winter Wheat Management 39

Sichuan

Bumper Harvests of Grain, Other Crops Reaped
(Sichuan Provincial Service, 24 Nov 80) 40

Briefs
Hog Sales 42
Agricultural Loans 42
'Bumper Harvests' Reported 42

Tianjin

Briefs
Grain Production 43
Nonstaple Food Price Control 43

Xinjiang

Briefs
Desert Plants Station 44
Book on Xinjiang Fish 44
Edible Oil Procurement 44

Xizang

Briefs
Qamdo Prefecture Water Conservancy 45

Zhejiang

Briefs
Agricultural Bank 46
Fishery Communications Station 46
Afforestation Projects 46
Pork Supply 46

II. PUBLICATIONS

Table of Contents of 'NONGYE JINGJI WENTI', Jul 80..... 47

I. GENERAL INFORMATION

PRC ATTEMPTING TO DEVELOP LOESS PLATEAU

OW141212 Beijing XINHUA in English 1201 GMT 14 Dec 80

[Text] Lanzhou, 14 Dec (XINHUA)—One-sided emphasis on grain production is not suited to the ecological conditions of the Loess Plateau in northwest China, and the area instead should be developed into a base for animal husbandry and forestry, an official of the Chinese Academy of Sciences declared at a meeting now being held here.

Speaking at a forum on the modernization of agriculture in northwest China, Shi Shan, deputy secretary-general of the academy, noted that in past years the region has been asked to be self-sufficient in grain even in years of natural disaster and to have some surplus grain in a good harvest year. This, he said, compelled the peasants to open large tracts of wasteland and aggravated erosion.

"The new principal of emphasizing animal husbandry and forestry does not exclude crop growing in some places suited to agriculture," Shi Shan said, "and the peasants there can still get grain supplies from the state."

Lying on the middle and upper reaches of the Yellow River, the Loess Plateau of northwest China covers an area of 530,000 square kilometers and has a population of 30 million. This land-mass is unique not only to China but also in the world. With its dry climate, the region has always suffered from serious erosion. Although the Chinese Government has poured huge amounts of money and materials into the region since liberation in 1949, it has failed to achieve self-sufficiency in grain and is still relatively poor.

Shi Shan said that planting trees and growing grass over large tracts would gradually transform the ecology of the region and control erosion, paving the way for developing animal husbandry and agriculture.

He said these methods have been tested and proved sound at experimental bases set up in 14 counties on the plateau in the past few years by the Chinese Academy of Sciences and the ministries of water conservancy, agriculture and forestry.

Shi Shan's remarks were supported by other scientists and experts in the forum, including Zhu Rong, vice-minister of agriculture, and Guan Junwei, professor from the Beijing College of Forestry.

Over 460 experts, professors and officials from the provinces and regions of Xinjiang, Gansu, Qinghai, Shaanxi, Ningxia, Inner Mongolia, Shanxi, Tibet and Sichuan and some central government departments are attending the forum, which began on December 7.

CSO: 4020

DISTRIBUTION OF STATE FARMS

Beijing ZHONGGUO NONGKEN [CHINESE AGRICULTURAL RECLAMATION] in Chinese
No 4, 24 Apr 80 p 28

[Text]

Each unit under acreage represents 10,000 mu

Number on map	Province [or region, municipality]	Number of farms	Farmland Acreage
1	Heilongjiang Province	141	3,217.20
2	Jilin Province	154	153.00
3	Liaoning Province	137	195.80
4	Beijing Municipality	16	6.10
5	Tianjin Municipality	15	10.60
6	Hebei Province	27	115.59
7	Nei Monggol	59	135.80
8	Shanxi Province	10	8.44
9	Shanghai Municipality	23	30.60
10	Jiangsu Province	37	118.07
11	Zhejiang Province	70	17.27
12	Anhui Province	30	59.28
13	Fujian Province	122	14.79
14	Jiangxi Province	159	58.61
15	Shandong Province	19	23.87
16	Henan Province	84	30.62
17	Hubei Province	46	216.58
18	Hunan Province	110	104.99
19	Guangxi	54	34.03
20	Guangdong Province	142	85.25
21	Sichuan Province	146	3.81
22	Guizhou Province	40	3.39
23	Yunnan Province	33	24.85
24	Xizang	9	24.25
25	Shaanxi Province	18	32.79
26	Gansu Province	27	63.79
27	Ningxia	15	45.69
28	Xinjiang	287	1,462.59
29	Qinghai Province	32	46.06
30	Taiwan Province		

Total: There were 2,062 state farms with a total of 63,440,100 mu of farmland throughout the country. (Note: these figures were up to the end of 1978)

CSO: 4007

GUANGXI HOSTS NATIONAL SEMINAR ON FORESTRY ECONOMIC THEORY

HK240742 Nanning Guangxi Regional Service in Mandarin 1130 GMT 20 Nov 80

[Summary] "The first national seminar on forestry economic theory was held in Nanning from 9 to 17 November." Some 170 representatives from sectors concerned of various places attended the forum. The seminar discussed many important subjects of forestry economic theory and received over 150 theses. "(Song Xingfan), deputy director of the Agricultural Economic Research Institute of the Chinese Academy of Social Sciences, gave the opening speech at the seminar; (Ma Hong), deputy director of the Chinese Academy of Social Sciences, made an important report on the national economic situation and issues of forestry economic theory; and (Bao Hua), deputy general secretary of Guangxi Regional People's Government, spoke." The participants at the seminar carried out discussions on four different topics, namely: 1) ecological economy of forests; 2) forest management systems; 3) system of ownership of forests; 4) rapid development of Chinese forestry modernization.

The participants freely aired their views, exchanged different ideas and made many proposals. They concluded that the state's forestry development was slow and discriminate lumbering was found everywhere because: 1) people do not have adequate understanding of the relationship between forestry production and natural ecology and the economy; and 2) the state's current forestry management system seriously hampers development of the productive forces, and the stress on timber production indirectly brings about excessive lumbering.

Thus, the participants proposed establishing forestry ecological economy as a subject for academic research, curbing forest destruction, reforming the current forestry management system and modernizing Chinese forestry.

"In conclusion, the seminar carried out preliminary discussions on future arrangements of academic activities in forestry economic theory and on important subjects for research."

CSO: 4007

APPLICATION OF ECONOMIC LAWS TO DEVELOPMENT OF SOYBEAN PRODUCTION URGED

Beijing NONGYE JINGJI WENTI [AGRICULTURAL ECONOMIC ISSUES] in Chinese No 7, 23 Jul 80 pp 29-32

[Article by Wu Leng [0702 1515]: "Apply Economic Laws To the Development of Soybean Production"]

[Excerpt] Prior to World War II, China's annual output of soybeans stood at between 18 and 23 billion jin. In the peak year of 1938, output amounted to 24.2 billion jin. Before the war, China annually exported between 15 and 34 million dan of soybeans, and between 10 and 25 million dan of bean cake. During the peak year (1929), total value of soybean exports amounted to 330 million yuan, which was one-fifth the value of total exports for the entire country. At that time, soybeans were the foremost of three major agricultural products sold abroad by China (silk, tea, soybeans), and enjoyed a high reputation in international markets.

Since 1958, however, a declining trend has been apparent in China's soybean production. Comparison of agricultural statistics for the period of the second Five Year Plan with the period of the first Five Year Plan shows a 21.3 percent decline in the area planted and a decline of 24.5 percent in total output with subsequent rises and falls. By 1976 the area planted had declined to 100.3 million mu and total output had declined to 13.28 billion jin, for a decline of 47.5 percent and 33.8 percent respectively over 1957, with total output still not reaching the 1950 level. Increases in per unit yields of soybeans nationwide has been slow, fluctuating around 120 or 130 jin for a long time. In 1976, average per mu yields were only 132 jin, an increase of only 27 jin over 1957. Output in seven of the eight provinces where soybean production is centered, with Heilongjiang Province being the exception, showed large declines from the peak year following Liberation. In Henan and Anhui, the decline was more than 40 percent. In Liaoning and Jilin, the decline was more than 50 percent. In Jiangsu and Hebei, the decline was more than 60 percent; and in Shandong it was more than 70 percent.

During the 3 years since the "gang of four" was smashed, the gradual revival of the party's policies in rural villages with two increases in the purchase price for soybeans paid by the state has brought about a virtual halt to the decline in soybean production. Nevertheless, a wide gap still remains between present production and the peak years following Liberation. The area sown to soybeans in 1979, for instance, amounted to only 55.7 percent of the 1957 area, and total output was only 67 percent of 1956 output.

The dislocation within agriculture resulting from decrease in soybean area and decline in production over the past 20-odd years has impaired both socialist construction and the people's livelihood. This has been manifested in the following several ways.

First, disruption of the rational crop pattern and destruction of the internal agricultural structure. Soybean roots bear nodules capable of fixing atmospheric nitrogen, which functions to fertilize and nurture the land. It is estimated that each mu of soybeans can fix between 6 and 7 jin of nitrogen, or the equivalent of between 30 and 35 jin of ammonium sulfate in terms of effectiveness. In general, bean crops produce from 10 to 30 percent greater output than non-bean crops. In addition, beanstalks and beancake residue are important sources of protein fodder for livestock. For these reasons, soybeans occupy an important position in a system of crop rotation. The rational system whereby pulses are rotated with other crops, which China's working people have worked out through long experience in production, maintained a balanced soil ecology and a rational internal agricultural structure. During the period of the first Five Year Plan the area planted to soybeans in China amounted to 9.4 percent of the total area planted to grain. Later on, owing to inappropriate restriction of the soybean area, the proportion declined to 6.1 percent during the period of the fourth Five Year Plan, bringing about a decline in the fertility of the soil in some places, and longterm inability to increase output of grain with impairment to increased agricultural output overall.

Second, a great reduction in the quantity of requisition purchase of soybeans, a decline in the commodity rate, and an ever sharpening conflict between supply and demand. During the first Five Year Plan, annual state requisition purchases of soybeans averaged about 10 billion jin for a commodity rate of around 50 percent. During the 1960's, both the quantity of requisition purchases and the commodity rate declined by more than half. During 1953, 14 provinces nationwide supplied more than 100 million jin of commodity soybeans each, but by 1978, the number had dwindled to only three northeastern provinces. Per capita production of soybeans during the first Five Year Plan averaged 31 jin, but this has now declined to 14 jin. Units concerned have reported that current annual needs for soybeans by various trades and industries can be only half filled at best, and there is an extreme shortage of them for use as industrial raw materials or for use in manufactures in cities or in the countryside. Formerly 4.6 billion jin of soybeans were used annually for the pressing of oil. The amount is now down to 2.6 billion jin for a 43 percent decline, which seriously impairs industrial development and supply for the people's livelihood.

Third, a sharp decline in the quantity of soybean exports. During the period of the First Five Year Plan, China annually exported 2.1 billion jin of soybeans, but in 1978 only 530 million jin were exported (380 million jin net exports). Before the war, China's soybean exports amounted to 90 percent of total world exports, but in 1976 it amounted to only 1 percent. As a result of the ever widening internal gap between procurement and supply since 1973, China has had to import soybeans annually, and the quantity imported has become larger and larger, necessitating expenditure each year of a large amount of foreign exchange. This is extremely disadvantageous to China's four modernizations.

The situation abroad, however, presents a clear contrast with the picture in our country. As a result of urgent need throughout the world during the past 30 years

for the development of protein for people's livelihood and for the livestock industry, a rapid development has occurred in soybean production. Statistics from pertinent data show that in 1949, the total area planted to soybeans worldwide was 184.5 million mu. By 1977 this had expanded to 741.4 million mu, for a more than threefold increase. The 1977-1978 world soybean output reached a record breaking 73 million tons (the equivalent of 156 billion jin) for an increase by 3.2 fold over 1950. The greatest development occurred in the United States and in Brazil. First experimental planting in the United States was done in 1804, and in 1924 output amounted to only 270 million jin. During the early 1950's, American output caught up with China's, and since 1954 United States production and export of soybeans has leaped to first place in the world. In 1977, the total area planted to soybeans in the United States amounted to 350 million mu for a total output of 93.4 billion jin, or 64 percent of the total world output. This represented a 6.4 fold increase in total output over 1949 for an average 7.4 percent growth increase. Brazil did not begin to develop soybean production until the late 1960's, but subsequently moved ahead quite rapidly. In 1977, its total soybean output had reached 23 billion jin for a more than 320 fold increase over 1949, and for a 28.1 percent average rate of increase. Additionally, the Soviet Union, Japan, Mexico, Argentina, and Canada made strenuous efforts to develop soybean production.

As the result of analysis and comparison of the historical evolution of soybean production at home and abroad for the past 30 years, we conclude that China's long-term lack of increase in soybean production results principally from the following:

First, for a long time the guiding thought in our agriculture has been sole concentration on grain and a one-sided seeking after quantity to the neglect of quality and economic value. The pattern of agriculture has lacked unified planning that takes all factors into consideration, has been overly cautious and indecisive, and has not given attention to a combination of soil use and soil nurture. Under the influence of these ideas, many places have lopsidedly given emphasis to development of "high output crops," neglecting to adjust methods to local situations for the development of pulses and food grains other than wheat and rice. Some places have treated soybeans as "low output crops" squeezing them out and not according them the attention deserved in planting plans, in measures to be taken to increase production, and in supplying raw materials for production. This has resulted in no change in production conditions for a long time, and a very low level of scientific farming. Some places even placed it in antithesis to other crops with the result that soybean production has been "mistreated" in many places. In Jilin Province, there was a situation of "three lasts," "three denials," and "five no goods," meaning planted last, taken care of last, and harvested last; denial of water, denial of fertilizer, denial of much investment of labor; no good seeds, no good selection of ground, no good prevention of calamities, no good care, and no good planting methods. In order to increase grain output, northern regions promoted intercropping of grain and soybeans, but as a result of the irrational ratio of soybeans to grain, the soybeans did not get either sufficient air circulation or light, and output was seriously impaired. A look at increases in per unit yields of six different grain crops grown in China shows that in 1978 grain crops averaged a 91.5 percent increase in production over 1953. Wheat increased by 160 percent, corn by 121.3 percent, gaoliang by 99.4 percent, paddy by 57.7 percent, millet by 46 percent, and soybeans by only 31.8 percent. In foreign countries, almost all soybeans are grown as individual crops [rather than being intercropped]. In the United States, for example, 60 percent of the area planted to soybeans is concentrated in the "cornbelt," where they are rotated with corn. They apply large

quantities of nitrogenous fertilizer to the corn crop preceding the soybean crop, and all cornstalks are chopped up for return to the fields. Consequently, the soil is rich in organic materials, and this, plus a high level of care, produces per unit yields that are again as high as China's.

Second, prevailing economic policies do not help arouse enthusiasm in the masses for development of soybean production. In China, a common system is employed in the requisition procurement of soybeans and grain alike, and since the basic quantities set for requisition purchases are high while per unit yields of soybeans are low, usually there is no production of soybeans in excess of quotas, which means there is no increased price to be gained from sales in excess of quota production. Furthermore, some provinces and prefectures employ unified planning for grain and soybeans in their setting of a ratio of beans to grain (with 1 jin of soybeans equaling from 1.2 to 2 jin of grain). Considering the current per mu yields of soybeans and rice, many prefectures report that the standard amount of grain for soybeans is too low. Third, once soybeans are sold, the cake residue from them is not returned, and no preference is given for award sales of fertilizer. Under present circumstances in which there is a general shortage of grain in China, the existence of the aforestated problems have become the main reasons for the impairment of soybean development. Abroad, however, virtually none of these problems exists. Notice that all of the countries in which soybean production has developed rapidly are inseparable from those in which the government gave vigorous support. For example, why did soybean production develop so rapidly in the United States? The main reasons were: 1. a large scale demand in domestic and foreign markets for soybeans and soybean products, principally protein feeds; 2. there was money to be made through dealing in soybeans. Foreign exchange earned through the export of soybeans helped make up for America's adverse balance of trade. In order to achieve the above two objectives, the United States Government adopted a series of actions to encourage the production of soybeans. For example, as early as 1921, some companies devoted exclusively to the buying and selling of soybeans appeared. They signed purchase contracts with farmers that guaranteed a payment price. In 1930, when American soybean production was still in its infancy, the United States greatly increased import duties on imported soybeans and soybean products in order to produce domestic development of soybeans. During World War II, external sources of imported soybeans were cut off, so the United States Government raised its purchase price of soybeans to stimulate soybean production. During the 1950's a large overstocking of soybean oil occurred in the United States and pressing of oil from soybeans came to a standstill. In order not to impair soybean production, the United States instituted "price subsidies" for soybeans and soybean products, thus guaranteeing normal soybean production.

Third, contravention of the laws of value with irrational prices for soybeans. China has raised the price of soybeans several times since Liberation, and the extent of the price rises have been greater than for grain crops so that a widening has occurred in the comparative price of grain and soybeans. This is a fact. But, we believe that in setting and readjusting commodity prices, consideration should be given not only to the cost of production but also to the economic value of the product, supply and demand in the market place, price in international trade, and price in comparison with other agricultural products. Soybeans are useful for edible oil, for fodder, and for fertilizer. They have a protein content as high as 40 percent, a fat content of 20 percent, and their nutritional value is vastly higher than for other grain crops. One jin of soybeans is equivalent in

nutritional value to about 5 jin of corn or 3.4 jin of wheat. One ton of soybeans exported in international trade can be exchanged for 2 tons of wheat. Though the price ratio between grain and soybeans is greater than ever, it is still low. (According to a survey conducted by commodity pricing units in 1979, 1 jin of soybeans exchanged for 2.05 jin of paddy. In North China, 1 jin of soybeans exchanged for 1.38 jin of wheat; and in the northeast and Nei Monggol, 1 jin of soybeans exchanged for 2.27 jin of corn.) Following price adjustments for grain and soybeans in 1979, according to a survey done in Heilongjiang Province, income from a mu of soybeans was from 5.16 to 6.9 yuan less than for grain when figured at the price following price readjustment and with production costs and agricultural taxes being deducted. A survey done in Shandong Province on the basis of average per mu yields of wheat, peanuts, and soybeans showed an income of 180 yuan per mu of peanuts, 85 yuan per mu of wheat, and 47.8 yuan per mu of soybeans. Income per mu of soybeans was 123 yuan less than for peanuts, and 37 yuan less than for wheat. It may be seen from the above that in order to promote development of soybean production, we believe that the facts must be taken into account in effecting suitable adjustments in the state procurement price for soybeans.

Soybeans occupy an important place in the national economy and the people's livelihood. Both the people and the state need soybeans. In the future development of agriculture, adoption of vigorous action to increase production of soybeans with all possible speed is an extremely important task in the readjustment of the internal structure of agriculture. Therefore, the following several views are given.

First, readjustment of pertinent economic policies. It is recommended that soybeans be differentiated from grain crops, that separate requisiton procurement quotas be assigned for soybeans, and that appropriate downward readjustment be made in the basic requisition purchase figures for soybeans that have been "guaranteed not to change for 5 years," so that brigades and communes that plant soybeans will be able to produce in excess of quotas and thereby increase their incomes. Those provinces and prefectures who employ a unified accounting for both grain and soybeans, can appropriately increase the grain for soybeans equivalents on the basis of current per unit yields for grain and for soybeans. In order to encourage those areas in which soybean production is concentrated to switch to more soybean production, consideration should be given to "price subsidies," sharing in foreign exchange, or direct links between locales and foreign traders for the export of soybeans in exchange for needed material and technical equipment so as to arouse the enthusiasm of jurisdications for increasing their production of soybeans. Following investigation, repeated comparisons of one place with another, and with consideration to helping production, suitable adjustments should be made in soybean prices and a policy should be instituted providing top price for top quality (the export price per ton of green skin soybeans is twice that of yellow skin soybeans, and differences in prices should be permitted from one region to another. Once soybean prices have been raised, sensible readjustments should also be made in the market and sale prices; otherwise too low a market price will seriously contravene the laws of value, will increase expenditures of public funds, and will not help in the transfer of soybeans out of their areas of production.

Second, suit general methods to specific conditions for a rational readjustment of the crop pattern. In regions where soybean production is concentrated or in regions suitable for the planting of sowing beans, revive and enlarge the soybean area, and gradually build commodity soybean production bases. Regions include Heilongjiang's

Songnen Plain, the central part of Jilin Province, north and southwest Shandong, the Xu-Huai region of Jiangsu, north of the Huai in Anhui, and Shangqiu, Zhoukou and some state farms in Henan. The state must give needed support in funds and materials (priority supply of chemical fertilizer, particularly phosphate fertilizer, dissemination of superior varieties, promotion of chemical weeding, and increase in the level of mechanization); appropriate consideration should be given economically to increase per unit yields, to increase the rate of labor productivity, and to increase the commodity rate. In this way, it will be possible to form up fairly rapidly China's major bases for the export of soybeans. In addition, in areas where there is no concentration of soybean production, vigorous efforts should be made to raise the level of local self-sufficiency and to reduce the transfer of soybeans out of the areas. In the wetland triple crop regions of the southlands, for example, rotation of paddy rice with soybeans would not only improve the soil, increase soil vitality, and promote production of paddy rice, it would also increase output of soybeans, and increase the incomes of communes and brigades, killing two birds with one stone. In places where numerous people live on little land as well, fullest use of the "five beside places" to plant soybeans possesses great potential and should be vigorously advocated.

Third, given China's current circumstances in which per unit soybean yields are low and a vast potential for increased production exists, development of soybean production should make an increase in per unit yields its major direction of attack. Typical cases of high soybean output in China and abroad have demonstrated that soybeans are not "low yield crops." All that is needed is genuine changes to production conditions, attention to the breeding of superior varieties, increased applications of fertilizer (particularly phosphate fertilizer), cultivation to get rid of weeds, prevention and control of diseases and insect pests, and sensible rotation of crops, making an increase in yields to more than 200 jin per mu entirely possible. (Maximum yields have been 300 to 400 jin per mu). If average yields nationwide could be raised to 200 jin per mu, even using only the land currently planted to soybeans, total output could be revived to the highest level achieved since Liberation. Research work on soybeans is currently very weak, and vigorous efforts should be made to strengthen it. It is proposed that an All China Soybean Research Center be established, that soybean research organizations be set up in areas of concentrated soybean production, and that they be staffed with experts to undertake soybean research and production to breed, as soon as possible, a new variety of soybean that matures early, produces high output, and is highly resistant to disease and insect pests. They should also explore the laws governing high soybean yields, and conduct experimental research in the intercropping of soybeans with other crops.

Fourth, undertake comprehensive use of soybean resources. The beancake residue left following pressing of oil and fat from soybeans contains an extraordinary abundance of plant protein that is of very high nutrient value. Formerly most such cake residue was used to feed livestock or as fertilizer. This was a great waste. At the present time, research in foreign countries for the extraction of plant protein from soybeans is progressing very rapidly, and prospects are vast. Future use of plant protein to manufacture low-cost artificial meat, artificial cow's milk, or artificial egg products to improve mankind's nutrition and to augment a shortage of animal protein shows great prospects. It is recommended that departments concerned intensify research of this kind, thereby making possible a change in the situation of soybeans being only a raw material, and greatly increasing the economic value of soybeans.

Fifth, vigorous development of sunflowers as the principal edible oil crop of North China to gradually replace soybeans and to make soybeans a source of protein food for urban and country people and for export. Sunflowers are fairly drought resistant, tolerant of cold, and able to grow on poor soil. They have a short growth period, fairly broad adaptivity, and an oil production rate that is once or twice that of soybeans. China has a vast potential for sunflowers. If the planned annual yield of 12 million dan of sunflower seeds is realized (1979 output was 6.1 million dan) for use in the pressing of oil, that would be the equivalent of the amount of oil derived from 2.6 billion jin of soybeans. If these soybeans are used for export, the level of soybean exports of the 1950's can be restored and $400 million in foreign exchange can be earned for the state.

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BRIEFS

PELTS, HAIR PROCUREMENT UP--Statistics showed that compared with last year, the procurement of the following products in China this year has increased: goat and dog skin and rabbit hair, up by more than 30 percent; cowhide, wool and cashmere, up by more than 20 percent; and hog bristles, up by more than 10 percent. The annual procurement plans for most of these products are close to fulfillment, while those for wool and cashmere have already been overfulfilled. [Beijing RENMIN RIBAO in Chinese 28 Nov 80 p 2]

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BRIEFS

OIL-FAT PROCUREMENT--Hefei, 13 Nov (XINHUA)--As of 5 November Anhui Province had already procured 160 million jin of oil and fat, overfulfilling the state procurement plan by 4 percent and topping last year's same period by 14 million jin. [Beijing XINHUA Domestic Service in Chinese 1242 GMT 13 Nov 80 OW]

LAKE DEVELOPMENT--The Chaohu Lake Management Committee held its 3d enlarged plenary session in Hefei and pledged to do a good job in developing Chaohu Lake. The meeting maintained that promoting joint ventures is the best way for developing and enlivening the fishery industry of Chaohu Lake. Wang Guangyu, secretary of the Anhui Provincial CCP Committee, spoke at the meeting. [OW161902 Hefei Anhui Provincial Service in Mandarin 1100 GMT 15 Nov 80 OW]

FENGYANG COUNTY GRAIN--Hefei, 17 Nov (XINHUA)--Fengyang County, Anhui, which was a poor county, is the first one in the province to fulfill the annual grain delivery quotas to the state in 1980. By 3 November, it had overfulfilled the 1980 grain procurement plan by 57.78 million jin. Its 1980 total grain output may reach 470 million jin. Its 1979 total grain output was 440 million jin. [CW241631 Beijing XINHUA Domestic Service in Chinese 0302 GMT 17 Nov 80 OW]

LINGBI COUNTY GRAIN, OIL--By 12 November, Lingbi County had sold 100 million jin of grain and 2 million jin of oil and fat to the state, overfulfilling this year's grain and oil procurement tasks. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 18 Nov 80 OW]

LUAN COUNTY GRAIN PROCUREMENT--As of 17 November, Luan County, Anhui, has overfulfilled the annual plan for the procurement of grain and edible oil in spite of the torrential rain since mid-October which flooded 420,000 mu of land. The county has procured 176.45 million jin of grain and 6.16 million jin of edible oil and fat. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 22 Nov 80]

FENGYANG COUNTY AGRICULTURE--Hefei, 2 Dec (XINHUA)--Thanks to contracting job quotas to individual households, production has developed in notoriously poor Fengyang County in Anhui in the past 2 years. Living standards of the commune members have improved and this county has purchased an additional 6,500 oxen, over 100 tractors and over 400 farming implements. The total grain output of the county has increased to 500 million jin this year, as compared to 290 million jin the year before last and the per capita income has increased from 61 yuan to about 120 yuan. [Beijing XINHUA Domestic Service in Chinese 0153 GMT 2 Dec 80 OW]

TIANCHANG COUNTY AGRICULTURAL PRODUCTION--Tianchang County in Anhui Province reaped a bumper harvest this year. The county's total grain output reached 580 million jin, that of ginned cotton over 40,000 dan and that of oil-bearing crops 14.43 million jin. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 3 Dec 80 OW]

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BRIEFS

GRAIN, OIL HARVEST--Lanzhou, 4 Dec (XINHUA)--Composing of Jiuquan, Zhangye, Wuwei prefectures and Jiayuguan Municipality, the Hexi corridor, Gansu, has reaped a bumper agricultural harvest this year. Total grain output reached 3.1 billion jin or 8.6 percent more than last year while oil-bearing crops increased by over 10 percent to a total output of 77.78 million jin. [Beijing XINHUA Domestic Service in Chinese 0253 GMT 4 Dec 80 OW]

GRAIN HARVEST--In 1980 Zhangye Prefecture had a good grain harvest. The total output reached 900 million jin, nearly 100 million jin more than was harvested in 1979. The total output of oil-bearing crops was 24 million jin, an increase of 8 million jin over that of 1979. Thus, total agricultural income was some 200 million yuan, an increase of some 30 million yuan. Peasants in the prefecture will increase their per capita income by 20 yuan and food grain by 50 jin over 1979. [SK220040 Lanzhou Gansu Provincial Service in Mandarin 1100 GMT 19 Nov 80 SK]

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CONFERENCE HELD ON PROCUREMENT, MARKETING GRAIN

HK280518 Guangzhou Guangdong Provincial Service in Mandarin 2345 GMT 26 Nov 80

[Text] The provincial people's government held a provincial conference on grain in Guangzhou from 11 to 18 November. The conference conveyed and implemented the intentions of the national grain conference and discussed the procurement and marketing quotas of grain and oil crops for this year, as well as the task of taking full responsibility in allocation and transfer of grain and oil crops, with quotas unchanged for the 3 years 1981-83. The participants studied problems of relevant policies and the question of how to strengthen control over grain and oil crops, control the grain sales and improve the quality of grain and oil crops.

This year our province has scored bumper harvests in the early and late crops of grain and oil. The situation is very good. The conference decided that provincial grain work in the coming winter and spring should focus on conveying and implementing the intentions of the national and provincial conferences on grain. At present we must concentrate our efforts on storing the late rice and oil crops in the granaries and strive to overfulfill the procurement quotas of the year and implement the task of taking full responsibility for grain and oil procurement quotas, which are to be unchanged for 3 years.

The conference held: More grain will be stored in the granaries because of the bumper harvest this year. All localities should promptly implement the task of storing late rice in the granaries, and the procurement tasks should be implemented down to the production teams as rapidly as possible. We must persist in the principle of prompt procurement and simultaneous arrangement. Under the premise that proper arrangements are made for seeds, grain rations and fodder, we must try to procure more grain, so long as we do not procure excessive grain.

The conference pointed out: From next year, the province will assume full responsibility for the quotas of procurements, allocation and transfer of grain and oil crops, which are to be unchanged for 3 years. This is an important reform in the administrative system of grain and oil crops. The provincial CCP committee and the provincial people's government demand that the readjustment task be implemented down to the production teams before spring farming according to the plan contained in the provincial official documents.

The conference also pointed out: Taking full responsibility for grain and oil crop procurement, allocation and transfer quotas, to be unchanged for 3 years, is only a change of administrative system between the province and the prefectures, and between the prefectures and counties. Besides readjusting and implementing the procurement quota, which is to be unchanged for 3 years, the counties should not assign full responsibility for allocation and transfer quotas to the communes and brigades.

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BRIEFS

EDIBLE OIL PROCUREMENT--As of the end of September, Guangdong Province has procured and stored 82.9 million jin of edible oil; an increase of about 20 million jin or 32.2 percent over the same period last year. [Guangzhou Guangdong Provincial Service in Mandarin 1120 GMT 26 Oct 80 HK]

WINTER CULTIVATION--According to a 14 November NANFANG RIBAO commentator article, some places in Guangdong are very enthusiastic for growing cash crops during winter but are not so keen on growing grain and green manure crops. Although the province has reaped a bumper grain harvest this year, it still cannot be said that Guangdong has ample grain. Each year the province reaps 1.2 to 1.8 billion jin of grain from crops sown in winter and harvested in spring. This figure is of great significance in the context of the masses' livelihood. Full attention must, therefore, be paid to winter grain cultivation. [Guangzhou Guangdong Provincial Service in Mandarin 2345 GMT 13 Nov 80 HK]

HAINAN TROPICAL CROP PRODUCTION--Hainan region has sped up production of tropical crops such as rubber, pepper, coconuts and so on. It has thus fulfilled 99 percent of the year's production plan and has increased the total area of planting by 20,000 mu over the same period last year. [Haikou Hainan Island Service in Mandarin 0330 GMT 20 Oct 80 HK] In accordance with the State Council's decision on speeding up the building of Hainan, the Hainan administrative district has planted more tropical crops and got very good results. In the past 1 month, the whole region planted 103,000 mu of tropical crops among which rubber accounted for some 40,000 mu, pepper some 10,000 mu and coconut some 13,000 mu. In order to implement the State Council's decision to a larger extent, all counties have held meetings to work out methods of increasing tropical crop production. [Guangzhou Guangdong Provincial Service in Mandarin 1120 GMT 27 Oct 80 HK] Since Hainan region carried out the State Council decision on speeding up the building of the region at the end of August, the region has cultivated 110,000 mu of tropical crops, such as rubber. Together with tropical crops cultivated previously, the region has cultivated 164,300 mu of tropical crops, including rubber, pepper, coffee and cashews, overfulfilling its quotas for cultivation for the whole year ahead of schedule. In addition, the region has appropriated 6.7 million yuan to help some communes and brigades develop tropical crops. [Guangzhou Guangdong Provincial Service in Mandarin 2345 GMT 31 Oct 80 HK]

HAINAN AGRICULTURAL MEETING--The Hainan Regional CCP Committee and Commissioner's Office recently held a conference on agriculture in the Han area of the island to arrange production for this winter and next year in accordance with the State Council's decision on speeding up Hainan construction. (Zhao Guangju) and (Wei Zefang), responsible comrades of the committee and the office, attended and spoke. Grain production this year is expected to be somewhat higher than last year, while cultivation plans for various tropical crops have been overfulfilled. Output of rubber and sugar may be over 10 [words indistinct] value of agricultural production should be 19.6 percent higher than in 1979, including a 10.4-percent rise in grain output value and a 30.69-percent rise in output value of tropical crops. Output value of forestry, animal husbandry, sideline occupations and fisheries should increase by 24.58 percent. In view of this plan, the sown area of rice in the Han area should be suitably reduced a bit next year, but efforts must be made to increase the yield. Some 210,000 mu of tropical industrial crops, mainly rubber, should be planted. All necessary agricultural capital construction work must be carried out well. [Haikou Hainan Island Service in Mandarin 0330 GMT 22 Nov 80 HK]

NEW TROPICAL CROPS INSTITUTES--In order to implement further and thoroughly the State Council's decision on rapidly developing Hainan Island, the Hainan Administrative District last month established the Hainan Administrative District Institute of Tropical Crops and the Hainan Administrative District Institute of Processing Tropical Crop Products. Individual counties have also set up corresponding experimental farms for tropical crops or stations for popularizing techniques. [Guangzhou NANFANG RIBAO in Chinese 28 Nov 80 p 1]

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BRIEFS

GUIZHOU PEASANTS' INCOME--Income of rural commune members in Guizhou Province has been increased. According to a survey by the provincial statistical bureau on 539 households in 13 counties, total cash income reached 54,559 yuan in the third quarter of 1980, or an increase of 45.1 percent over the corresponding period in 1979, and each individual's income averaged a little over 25 yuan, up 7 yuan over the same 1979 period. [Beijing Domestic Service in Mandarin 1200 GMT 17 Nov 80 OW]

CSO: 4007

BEIJING WEATHER STATION REVIEWS LOCAL CONDITIONS

OW111419 Beijing XINUUA in English 1238 GMT 11 Dec 80

[Text] Beijing, 11 Dec (XINHUA)--Beijing saw its second snowfall last night since winter set in, bringing the temperature down to 3.4 degrees centigrade below zero today, according to the Beijing weather station.

This snowfall, and the previous one on December 7, marked the end of the unusually warm winter weather, said Wu Gaoren, deputy director of the city weather station. The winter weather in the next two or three months will become normal, with frequent northerly winds.

Winter usually comes to Beijing in mid-November with an average temperature of about 3 degrees centigarde below zero. But this year, it arrived half a month later and the temperature in the second half of November remained around 4 to 5 degrees centigrade until the first snowfall on December 7, the warmest winter in the last 40 years, Wu Gaoren said.

The deputy director of the weather station explained that the unusually warm weather was caused by the weak cold current in high latitudes in the northern hemisphere which was not powerful enough to press down southward as it usually did.

Though bringing some difficulties on city traffic and transportation, the two snowfalls are good for winter crops and people's health. It will also help alleviate the prolonged drought that has seriously affected the city's farm production and power supply.

While the wearm weather in November was favorable to wheat in Beijing's suburbs which has grown strong enough to resist the severe cold in the next two or three months, it caused a lot of Chinese cabbage to defoliate or rot.

Wu Gaoren predicted that there would not be much snow in December and the coming January. Heavy snow usually comes in February, he said.

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BRIEFS

GRAIN CIRCULAR--The Hebei Provincial People's Government issued a circular on 20 October on stepping up wheat tending during the winter. The circular said: Since autumn, the whole province has attached importance to wheat production and reaping a bumper harvest next summer. However, some places are left behind in fulfilling wheat planting due to various droughts. According to meteorological forecasts, the coming winter will be relatively cold. Therefore, all places must start wheat tending earlier, they must: 1) persist in fighting natural disasters to reap a bumper harvest; 2) firmly grasp key measures to nurse young plants before the winter; 3) seriously implement the Central Committee's instructions on strengthening the agricultural production responsibility system; 4) set up a responsibility system for the scientific management of wheat; 5) set up and perfect the responsibility system of the leading cadres. The circular also demanded that industrial, communications, commercial and financial departments promote supplies of materials to support agriculture. [HK120921 Shijiazhuang Hebei Provincial Service in Mandarin 0430 GMT 20 Oct 80 HK]

GRAIN, EDIBLE OIL PROCUREMENT--As of November 26, Tianjin municipality overfulfilled its grain and edible oil procurement plans by 6.1 percent and 22 percent respectively. [Beijing RENMIN RIBAO in Chinese 30 Nov 80 p 1]

CSO: 4007

BRIEFS

FARM OUTPUT FIGURES--The output of economic crops was a marked increase; total output set historical highs. The total output of such oil-bearing crops as sunflowers and peanuts was 3.899 million dan, an increase of 1.8 times over that in 1979. The total output of flax and hemp was 3.714 million dan, an increase of 62.3 percent over 1979. The total output of sugarbeet was 2.456 million tons, nearly double what it was in 1979. Forestry, animal husbandry, fishery and rural sidelines production saw all-round development. Some 3.5 million mu was afforested; this was an increase of 9.4 percent over last year. Seedlings were grown on 63,000 mu, an increase of 16.3 percent. In animal husbandry, the number of sheep and goats increased to 2.805 million head, an increase of 14.2 percent which was the largest increase for any one year. Milk cows increased to 74,000 head, an increase of 15.6 percent. Collectively raised hogs again rose increasing from 1.056 million head in 1979 to 1.267 million head in 1980, an increase of 20 percent. The output of silkworm cocoons reached 46,000 dan, an increase of 35.3 percent over 1979. Output of fish was 20,000 tons, a 17.6 percent increase. [Beijing RENMIN RIBAO in Chinese 9 Dec 80 p 1]

CASH CROPS EXPANDED--Nenjiang Prefecture in Heilongjiang Province has expanded the acreage of beets and sunflowers to 2.7 million mu this year, an increase of 1.7 million mu over last year, and earned 171 million yuan from them, an increase of 127 million yuan over last year. Per-capita income increased from last year's 102 yuan to this year's 115 yuan. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 26 Nov 80 SK]

CSO: 4007

BRIEFS

COTTON PROCUREMENT--Zhengzhou, 20 Nov (XINHUA)--As of 15 November, Henan Province had procured 4.6 million dan of cotton, topping the annual procurement plan by nearly a million dan. On top of the original 400,000 dan cotton planned to be delivered to other provinces, Henan had added another 100,000 dan for delivered 200,000 cotton to Beijing, Shanghai, Liaoning and Guangdong. [OW251525 Beijing XINHUA Domestic Service in Chinese 0118 GMT 20 Nov 80 OW]

AGRICULTURAL MODERNIZATION MEETING--The Chinese Agricultural Modernization Economic Research Association recently held its second academic seminar in Taoyuan County, Hunan. Discussions were centered on the questions of how to carry out agricultural modernization, what components of current production structure, economic system and economic management of agriculture fail to meet the needs of modernization, and how to carry out reform and readjustment. The meeting, which lasted 8 days, was attended by 70 professors, experts and theorists and others from all parts of the country. The meeting put forward 10 suggestions for study and reference by the central authorities. [Changsha Hunan Provincial Service in Mandarin 2315 GMT 21 Nov 80]

GRAIN PROCUREMENT--After reaping a bumper grain harvest, Henan's rural cadres and commune members have sold surplus grain to the state. By 18 November, the province had stored 5.32 billion jin of grain in granaries, overfulfilling the annual grain procurement task assigned by the central authorities. The amount of grain stored in granaries is an increase of some 300 million jin compared with the same period last year. [HK270818 Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 23 Nov 80 HK]

WATER CONSERVANCY MEETING--The Huanghe Water Conservancy Committee of the Ministry of Water Conservancy held a meeting in Zhengzhou from 10 to 20 October on taming the Huanghe. The meeting summed up past experiences in taming the Huanghe and arranged future tasks. The participating comrades held: The taming of the Huanghe is a project which requires more expenditure. However, the committee has been successful in reducing expenditure this year by means of implementing contract systems and improving management methods. The meeting demanded that leaders at all levels continue to emancipate their minds and boldly carry out reform. They must use less investment to bring about better achievements. [Zhengzhou Henan Provincial Service in Mandarin 1130 GMT 23 Oct 80 HK]

GRAIN PROCUREMENT QUOTA OVERFULFILLED--This year's grain procurement quota for Henan has been overfulfilled. As of 18 November, the total amount of grain delivered to granaries in the province reached 5.32 billion jin, 20 million jin over the state procurement quota, more than 300 million jin over the comparable period of last year. Despite many natural disasters, Henan's total grain output for the current year is at the same level of last year. [Beijing RENMIN RIBAO in Chinese 29 Nov 80 p 1]

CSO: 4007

BRIEFS

FARMLAND CAPITAL CONSTRUCTION MEETING--A recent Hubei provincial agricultural capital construction conference pointed out that the main tasks for this winter and next spring are to strengthen and repair river embankments, restore projects destroyed by floods and repair reservoirs in a dangerous state. The meeting was held in Wuhan by the provincial people's government from 3 to 10 November. The meeting pointed out: "Due to the state's financial and economic difficulties, there can be no increased investment for water conservancy construction in the short term. Hence, no new projects will be built this winter and next spring. In addition, it is necessary to take stock of each project currently under construction. Decisive measures must be taken to halt work on projects that require a lot of construction and cannot yield benefit for some time. Essential projects must be completed as rapidly as possible" The meeting pointed out that the current high water level of lakes and reservoirs will be beneficial if next year is a year of drought, but will not be beneficial for flood prevention and draining waterlogged land if there are torrential rains and floods again. The emphasis on work this winter and next spring must, therefore, be on flood prevention. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 11 Nov 80 HK]

AGRICULTURAL ZONING MEETING--The Hubei Provincial People's Government held a conference on agricultural zoning and soil surveys from 12 to 19 November. The conference held: It is essential to strengthen leadership over this work, combine the work with production, lay stress on the key points, investigate the current most pressing problems in agricultural production and also attach importance to systematic and deepgoing investigation and study and long-term planning. It is also necessary to solve problems of equipment and capital. Provincial CCP committee secretary Huang Zhizhen delivered a summation speech. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 21 Nov 80 HK]

CHANGJIANG RIVER CONTROL--The CCP committee of the 330 project bureau held a meeting on 13 November on cutting the flow of the Changjiang. (Lin Rulu), second secretary of the project bureau CCP committee, presided. Also present were (Chen Gengyi), vice minister of water conservancy, and (Liu Shutian), vice minister of water conservancy and concurrently first secretary of the project bureau CCP committee. (Wang Ziqing), secretary of the committee, read out the committee's decision on insuring successful completion of the project to cut the flow of the Changjiang. The decision called on all personnel working on the Gezhou dam to urgently mobilize, clear away all difficulties, and win victory in the project. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 13 Nov 80 HK]

CSO: 4007

BRIEFS

URGENT FORESTRY INSTRUCTIONS--The Hunan Provincial CCP Committee and the provincial people's government recently issued urgent instructions on improving management of mountain forests and stopping indiscriminate lumbering. The instructions are: 1) rapidly settle disputes concerning forests and lumbering; 2) strictly control lumbering which exceeds the state quota and strengthen management over timber production; 3) actively set up forestry protection. The instructions demanded that CCP committees and governments at all levels strengthen leadership over forest management and attach importance to forestry. [HK120915 Changsha Hunan Provincial Service in Mandarin 2315 GMT 6 Nov 80 HK]

TIMBER FORUM--The Hunan Provincial People's Government held an urgent forum on timber production and management from 15 to 18 November. The meetings demanded strict observance of timber planning management, curbs on indiscriminate lumbering and speculation in timber, and efforts to fulfill this year's timber and bamboo production plans. [Changsha Hunan Provincial Service in Mandarin 2315 GMT 21 Nov 80 HK]

OIL-BEARING BEANS PRODUCTION--Changsha, 6 Dec (XINHUA)--Longhui County in Hunan this year has reaped some 2.2 million jin of ground almond, a kind of rich oil-bearing beans introduced from North Africa in the 1950's. This year's output doubled last year's figure. About 30 jin of oil can be extracted from each 100 jin of the beans. [Beijing XINHUA Domestic Service in Chinese 0118 GMT 6 Dec 80 CW]

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BRIEFS

COCOON HARVEST--Jiangsu Province this year has registered a total of 712,000 dan of cocoon harvest. Twenty-one counties produced over 10,000 dan of cocoons each. [Nanjing Jiangsu Provincial Service in Mandarin 2300 GMT 15 Nov 80 OW]

AGRICULTURAL ZONING--The second Jiangsu provincial conference on agricultural zoning was held in Suzhou from 18 to 22 November. The conference thoroughly discussed such major questions as how to conduct a general survey on soil conditions and agricultural resources in each county and how to establish agricultural regions in a systematic way. The conference also asked the party committees and people's governments at all levels to attach great importance to the work of agricultural zoning in Jiangsu. The conference was attended by responsible comrades from the provincial departments concerned and each prefecture and county, experts, professors and scientists from various universities, and representatives from various departments concerned in Shanghai. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 25 Nov 80 OW]

WINTER CROPS--Field management of over-wintering crops is in full swing in Jiangsu's Yangzhou Prefecture. Although winter sowing started later than last year, the prefecture has now planted approximately 4.5 million mu of wheat, barley and naked barley and transplanted some 600,000 mu of rape since the beginning of winter. In order to strive for a bumper harvest next summer, effective measures have been adopted by all counties of Yangzhou Prefecture to step up field management. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 25 Nov 80 OW]

HUAIYIN PREFECTURE COTTON--Huaiyin Prefecture in Jiangsu Province reaped good cotton harvests this year. As of 30 November, the prefecture has procured 469,000 dan of cotton and thus overfulfilled the state cotton procurement plan by 22 percent. The total cotton output in the prefecture this year is 50 percent or more above the 1979 production. Siyang County alone grew 180,000 mu of cotton while Guanyun County grew 100,000 mu this year. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 3 Dec 80 OW]

BUMPER PEANUT HARVEST--A bumper harvest was gathered from some 850,000 mu of peanuts in Xuzhou and Huaiyin prefectures, two major peanut-producing areas of Jiangsu. Total output exceeded 2 million dan, an increase of nearly 30 percent over 1979. Approximately 470,000 mu in Xuzhou Prefecture were planted with peanuts of fine strains this year. [Nanjing Jiangsu Provincial Service in Mandarin 2300 GMT 7 Dec 80 OW]

GANYU COUNTY PEANUTS--Ganyu County, Jiangsu, produced about 50 million jin of peanuts this year, topping the 1979 output by 12 percent or more. The county grew 150,000 mu of peanuts in 1980. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 3 Dec 80 OW]

CSO: 4007

BRIEFS

AGRICULTURAL ZONING MEETING--The Jiangxi Provincial Agricultural Committee recently held a conference on county level agricultural zoning which forms a basis for guiding agricultural production according to natural and economic laws. It is fundamental work for enabling the peasants to get rich as soon as possible, and also mark a new starting point for building modern agriculture. The meeting held that further investigations and study should be conducted in this work. The work should be basically completed by 1985. [HK190252 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 7 Nov 80 HK]

CSO: 4007

'JILIN RIBAO' REPORTERS INTERVIEW ZHANG GENSHENG

SK280300 Changchun Jilin Provincial Service in Mandarin 2200 GMT 27 Nov 80

[Excerpts] On 20 November, JILIN RIBAO reporters interviews Zhang Gensheng, secretary of the provincial CCP committee in charge of agriculture.

The reporters asked: What is the general situation of our province's agricultural production this year?

Comrade Zhang Gensheng replied: Following the smashing of the "gang of four," especially after the third session of the party Central Committee, the general situation of our province's rural areas has been very good and the attitude of the public has been stable. We have had a comparatively good harvest this year despite serious disasters. According to preliminary reports received from the various localities, grain output this year showed a slight decline over the 1979 figure. During the 31 years since liberation, our province has enjoyed three bumper harvests: in 1975, 1978 and 1979. Grain outputs in those 3 years surpassed or equalled 18 billion jin, slightly behind these three periods in 1974, when the year's total grain output was 17.1 billion jin. This year's total output is close to or equal to the 1974 figure and is the fifth bumper harvest year since liberation.

Output of oil-bearing crops has greatly increased last year's total output of 250 million jin compares with this year's 380 million jin. The state has procured some 370 million jin of oil-bearing crops, an increase of 52 percent over that of 1979. Last year's total output of sugar beets was over 500,000 tons: this year's total output is estimated at 1.1 million tons. The increase is so marked that sugar refineries do not have the capacity to refine them all. Sugar refineries used to operate 160 days annually, but they plan to keep their machines operating for 240 days this year to refine 1 million tons of sugar beets. The remaining 100,000 tons will be used to distill liquor.

In livestock production, hog raising has rapidly developed. During the first 10 months of this year, the province procured 1.2 million head of hogs compared with 960,000 head in the corresponding period of 1979. The average weight of hogs procured this year was higher than that in 1979 by 20 jin. The number of sheep will increase by 300,000 head by the end of this

year over the 1979 figure, an increase of 19.3 percent. The number of cows is expected to increase by 4.2 percent, reversing a recent downward trend. Meat output is expected to increase by 30 million jin, up 7.3 over the 1979 figure.

There will [be] no marked decline in commune members' average income from collective distribution over that of 1979. My guess is that it will be equal or slightly below last year's. The problem is that the distributions are not balanced. Commune members' income in disaster-ridden areas will fall short of last year's level.

CSO: 4007

BRIEFS

SUGARBEET HARVESTS--Changchun, 24 Nov (XINHUA)--Jilin has reaped a bumper harvest of sugarbeets this year. The province is expected to procure about 1.11 million dun of sugarbeets, more than double last year. In order to properly handle this large amount of beets, a meeting of the directors of the six sugar refineries in Jilin, whose total annual production capacity was only 640,000 dun, was held 19-20 November. The meeting decided that the sugarbeet processing period is to be extended from 160 days to 240 days. All localities are urged to do a good job in preserving sugarbeets. [Beijing XINHUA Domestic Service in Chinese 0208 GMT 24 Nov 80 OW]

FUSONG COUNTY HARVEST--Changchun, 6 Dec (XINHUA)--Fusong County in Jilin, known as the "homeland of ginseng," has again reaped a bumper ginseng harvest this year. The total proceeded ginseng produced this year reached some 1.2 million jin, increasing some 110,000 jin compared with last year. [Beijing XINHUA Domestic Service in Chinese 0126 GMT 6 Dec 80 OW]

CSO: 4007

BRIEFS

AUTUMN AFFORESTATION—Autumn afforestation has been completed in Liaoning Province. According to statistics, some 1,475,000 mu of land were afforested, an increase of 205,000 mu over that of the corresponding 1979 period. The province altogether afforested 4,395,000 mu of land with protective forests, timber forests and economic forests, surpassing the state afforestation plans. [Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 25 Nov 80 SK]

CSO: 4007

BRIEFS

DAIRY FARMS--During the January-October period, 10 communes and brigades in suburban Hohhot increased the number of dairy farms and cattle, upgraded dairy products and produced 1,030 tons of milk, an increase of 64.5 percent over that of the corresponding 1979 period. [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 21 Nov 80 SK]

OIL-BEARING CROPS--As of 5 November, the grain departments in Jarud Banner, Nei Monggol Region, procured some 435,000 tons of oil-bearing crops, an extra of 2.9 percent to state assigned task. [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 21 Nov 80 SK]

AFFORESTATION PROJECTS--Afforesting more than 4.85 million mu and planting more than 78 million trees along roadside and waterside in each quarter of 1980, Nei Monggol Region has overfulfilled the annual plans for afforestation and planting trees along roadsides and watersides by 8.2 and 16.2 percent, respectively. [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 22 Nov 80 SK]

XINGAN OIL-BEARING CROPS--As of 10 November Xingan League, Nei Monggol, had stored 54 million jin of oil-bearing seeds, fulfilling 35 percent of the regional storage plan. In 1980 Xingan League has expanded farm acreage and planted 490,000 mu of oil-bearing crops, the total output is expected to be 70 million jin, an increase of 2.8 times that of the 1979 figures. [SK220132 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 19 Nov 80 SK]

RAT EXTERMINATION--Hohhot, 13 Nov (XINHUA)--White clay (bai tu or terra blanc) has been found an effective base medium for poisonous rat bait, the Inner Mongolian Epidemic Research Institute announced recently. Making the bait from white clay will result in the saving of large amounts of grain. In the past, 500,000 kilograms of grain were used annually to make rat bait in the western part of Inner Mongolia alone. The white clay used to make the bait is abundant in Inner Mongolia and other parts of China, so the poisonous pellets can be produced cheaply. Experiments have shown that the new bait is particularly effective in the extermination of the ground squirrel (citellus dauricus), the clawed jird (meriones un-guiculatus) and Brandt's vole (microtus Brandti), three rodents that are prevalent on some 1,200 million hectares of grassland and farmland in China. [OW161744 Beijing XINHUA in English 0736 GMT 13 Nov 80]

AGRICULTURE-LIVESTOCK FARMS--Nei Monggol has 124 state-operated agriculture/livestock farms with a total of 6.3 million mu of farmland, 280,000 staff members and workers, 58 million mu of pasture and 1.14 million head of animals. In 1979, these farms achieved a bumper livestock harvest with a net 7.7 percent increase in livestock inventory at yearend. Despite severe natural disasters, agricultural production was good, producing enough grain to provide the state with more than 100 million jin of commercial grain. For many years in the past, these farms did not produce sufficient grain for their own use and required a supply of grain from the state. The output value of their industrial and sideline production exceeded 70 million yuan, a 5.8 percent increase over the previous year. As a result, their total loss for 1979 was one-third less than the year before. In 1979, 46 or 27 percent, of the enterprises in these farms made a profit, and a number of production teams were noted for achieving high output, high productivity and large profits. As a whole, these farms' achievements were enormous, and further progress is highly possible as operation and management are further enhanced. [Beijing ZHONGGUO NONGKEN [CHINESE AGRICULTURAL RECLAMATION] in Chinese No 4, 24 Apr 80 p 2]

AFFORESTATION, TREE PLANTING--This year people in Nei Monggol afforested more than 4,851,000 mu of land and planted 78,590,000 additional trees around buildings and in other available spaces, overfulfilling the annual plans by 8.2 and 16.2 percent respectively. [Beijing RENMIN RIBAO in Chinese 2 Dec 80 p 1]

CSO: 4007

BRIEFS

GRASSLAND CAPITAL CONSTRUCTION--Qinghai Province has narrowed the scale of grassland capital construction in 1980 to concentrate manpower and funds on building subsidiary water conservancy projects. By the end of 1980, usable grassland will be expanded by 4.6 million mu. These new water conservancy projects will solve the water problems of 20,000 people and 360,000 animals. [Xining Qinghai Provincial Service in Mandarin 2330 GMT 18 Nov 80 SK]

SEED PRODUCTION--Qinghai Province has cultivated some 100 million jin of fine seeds in 1980. Through readjustment, all seed-producing bases and state seed-breeding farms may produce 3.5 jin of fine grain and oil-bearing seeds this year. Various county seed departments have built some 30,000 mu of seed breeding plots in rural areas. They are expected to produce 14 million jin of fine seeds. Nearly 200 brigades in the province have cooperated with production teams to form specialized seed breeding teams. About 15,000 mu of fine wheat seeds breeding plots have been built. [Xining Qinghai Provincial Service in Mandarin 2330 GMT 18 Nov 80 SK]

GRAIN OUTPUT UP--A "bumper" grain harvest has been realized in Qinghai this year. The total output was more than 5 percent higher than in last year. With the exception of some state-operated agriculture/livestock farms reporting a lower output, every county in the province achieved a bumper harvest. The eight counties in Haidong Prefecture, which produces 60 percent of all the grain in the province, registered a 10-percent increase in grain output over last year. [Beijing RENMIN RIBAO in Chinese 17 Nov 80 p 1]

CSO: 4007

BRIEFS

COTTON PROCUREMENT--SHAANXI RIBAO carried a commentary on 4 November urging the whole province to do a good job of cotton procurement. The commentary said: Leaders throughout the province should attach importance to cotton procurement now. Cotton procurement in the province this year has encountered difficulties due to unfavorable weather. However, we must not slacken our cotton procurement work. We can overcome these difficulties by implementing the production responsibility system and motivating the activism of the peasants. Recently, in some areas, individuals have been found selling and purchasing cotton. We must resolutely forbid this since it directly affects the progress of the province's cotton procurement work. The commentary said in conclusion: cotton procurement is a major economic task in our province. The cotton that our province procures each year accounts for over 100 percent of the province's procurement of textile industry raw materials. If we fail to do cotton procurement well, the province's textile industrial production will be affected. Therefore, we must do a good job of cotton procurement. [Xian Shaanxi Provincial Service in Mandarin 2300 GMT 4 Nov 80 HK]

MILCH GOAT RAISING--According to SHAANXI RIBAO reports, Shaanxi Province has greatly developed the raising of milch goats over the past few years. According to statistics, as of the end of 1979, the province raised 590,000 milch goats, accounting for 50 percent of the number of milch goats throughout the country. At present, there are 47 dairy product factories in the province. In 1979, the province produced 4,357 tons of dairy products. In the first half of 1980, the amount of dairy products produced was increased by over 50 percent compared with the same period last year. As a result of this, the income and livelihood of the peasants have been improved. [HK120911 Xian Shaanxi Provincial Service in Mandarin 2300 GMT 24 Oct 80 HK]

YANAN PREFECTURE BUMPER HARVEST--Xian, 6 Dec (XINHUA)--Yanan Prefecture in Shaanxi gathered in a rich harvest this year. Total grain yield reached 946 million jin, topping last year's output by 30 million jin. This year, the people in the prefecture have also afforested some 700,000 mu of land, some 100,000 mu more than last year's afforestation record. [Beijing XINHUA Domestic Service in Chinese 0203 GMT 6 Dec 80 OW]

CSO: 4007

REASONS FOR GREATER ACCUMULATION OF FARM DEBTS, LESS EFFECTIVE FARM LOANS

Beijing NONGYE JINGJI WENTI [AGRICULTURAL ECONOMIC ISSUES] in Chinese No 7, 23 Jul 80 p 64

[Article: "Why the Greater the Accumulation of Farm Debts the Less Effective Farm Loans"]

[Text] A lot of farm loans are being issued nowadays, but few of them are being repaid as the accumulation of debt gets greater and greater. Outstanding farm loans for all of Shandong Province amount to 1.3 billion yuan of which 1 billion yuan, or 76 percent, consists of old loans that have not been turned over. During the 3 year period 1976 to 1978, the accumulated debt amounted to 620 million yuan, corresponding to the accumulated debt for the 14 year period 1962 to 1975. The benefits from farm loans have become fewer and fewer. In 1972, a bank loan of 1 yuan would bring an income of 79 yuan to a production team. By 1975, this had declined to 19 yuan, and by 1978 to only 13.5 yuan. The major reasons occasioning this situation were:

1. Excessive expenditures for the building up of farmlands and the purchase of equipment that exceeded the capacity to accumulate of communes and production brigades. For example, between 1976 and 1978, Ningyang County production brigades and production teams withdrew accumulation funds totaling 13.29 million yuan, while at the same time actual expenditures were 20.12 million yuan, or excess expenditures of 6.83 million yuan.

2. Agricultural expenses have been heavy and production costs high. For example, in Huantai County, 1978 agricultural expenses amounted to 46.5 percent of total income. Cost of production of each jin of grain amounted to .07 yuan, double the 1971 figure. In 1978, the county issued a total of 9.11 million yuan in loans to cover expenses, obtaining repayment of only 7.4 million yuan in the same year.

Some leadership organizations did not give sufficient attention to economic effectiveness and did not respect the autonomy of production teams in undertaking some projects of no benefit whatsoever, and in distributing or promoting the sale of some unsuitable goods. As a result, some loans could not achieve their intended effectiveness, adding to the burden of communes and brigades.

4. Acting in the name of support to agriculture, some places acted recklessly in apportioning money, digging funds out of production teams, and milking loans from banks and credit cooperatives. A case in point occurred in Ningyang County, which

was preparing to build a chemical fertilizer plant. During 1977 and 1978, 3261 production teams apportioned 4.1 million yjan for chemical fertilizer investment. In consequence, production teams that had heretofore borrowed no money were now borrowers, and those that had previously taken out loans were now even less able to repay them.

5. Some production teams unilaterally stressed increases in distributions to commune members, distributing as well, loan funds that should have been repaid. In 1978 the properly apportionable sum for commune members in Huantai County was only 36.53 million yuan, but 37.62 million yuan was actually distributed, for an excess of 1.09 million yuan.

6. Financial units did not give attention to the use of economic methods to manage farm loans with the result that farm loan management tended to be lax, checking was not strict, supervision was inadequate, loans that should not have been made were made, and loans that should have been collected were not collected.

As means of reducing the accumulation of debts for agricultural loans and obtaining better economic benefits, comrades in the Shandong Provincial Bank have proposed the following ideas for improvements.

(1) The future emphasis of agricultural loans should be for use in active support of development of the commodity economy with a concentration of forces to promote diversification of commune and brigade business enterprises, and to promotion of economic crops such as cotton, and peanuts. Provinces and prefectures can concentrate some funds for the support of some production projects that require little money, bring large benefits, and show quick results. When legitimate household sideline industries run by commune members lack funds, they should also be actively supported. (2) In capital construction undertakings, communes and production brigades should confine themselves to "action within capabilities." They should advocate a spirit of "pulling themselves up by their own bootstraps." Issuance of loans for equipment should be decided on the basis of annual accumulations of funds after withdrawals. (3) There should be continued adherence to the farm loan assured action method whereby the more loans repaid the more loans granted, and the more funds saved, the more funds to be used. In order to fully arouse the enthusiasm of all echelons administering loans, contracts should be drawn up with communes, which are firm and, by and large, unchangeable. (4) Make full use of the role of functional units. Banks and credit cooperatives should undertake investigations for funds and determine the focus of their support. Loans to production teams have to be formally requested with banks and credit cooperatives issuing approvals in a change from the past method whereby individuals in CCP committees had the final say.

(Originally published in NONGWEI JIANBAO [AGRICULTURE COMMITTEE BULLETIN], Issue 26, 1980. Deletions and revisions made by this magazine)

9432
CSO: 4007

BRIEFS

SHANDONG REAPS BUMPER CASH CROPS--As of 26 November, 9.02 million dan of cotton were procured in Shandong, and this was 2.69 times the total cotton output of last year. Peanut output surpassed that of last year by 20 percent, and tobacco production was 70,000 dan higher. Although grain output was a little below that of last year, the total still exceeded 45 billion jin, the same as in the previous 2 years. [Beijing RENMIN RIBAO in Chinese 2 Dec 80 p 1]

ECONOMIC CROPS--Shandong Province reaped a bumper harvest of economic crops in 1980. According to state plan, supply and marketing cooperatives in this province had allocated cotton, flue-cured tobacco and silk cocoons to support light and textile industries. By mid-November, these cooperatives had allocated 444,000 dan of flue-cured tobacco and 61 cigarette plants throughout the country, an increase of 33 percent over the corresponding 1979 period. This year, in addition to supplying cotton to provincial factories, they also supplied 500,000 dan of ginned cotton to 17 provinces and municipalities throughout the country, including Shanghai, Tianjin. Beijing, Liaoning, Jilin, Heilongjiang, Nei Monggol and Gansu. Top-quality cotton reached some 95 percent. So far, Shandong Province had allocated 80,000 dan of silk cocoons to support the silk industry. [SK231242 Jinan Shandong Provincial Service in Mandarin 2300 GMT 22 Nov 80 SK]

COTTON-SESAME HARVEST--Shandong Province has reaped bumper cotton and sesame harvests this year. As of 24 November, the provincial cotton per-unit-yield was more than 100 percent higher than that of 1979 and the total cotton output was nearly 200 percent higher than that of 1979. The volume of procured cotton reached 8.89 million dan, surpassing the state assignment by more than 2 times. As of 20 November, the province procured 34 million jin sesame, overfulfilled the state sesame assignment by 100 percent and surpassed the corresponding 1979 period figure by 4 times. In addition, the province has also purchased 15 million jin sesame in advance. It is estimated that the total purchase volume of sesame will be nearly to 50 million jin. [Jinan Shandong Provincial Service in Mandarin 2300 GMT 25 Nov 80 SK]

AUTUMN GRAIN--Jiaonan County, Shandong Province, had handed over to the state some 100 million jin of autumn grain as of 10 November, overfulfilling the state-assigned procurement task by 4.9 million jin. [SK231240 Jinan Shandong Provincial Service in Mandarin 2300 GMT 21 Nov 80 SK] As of 15 November, Zibo Municipality, Shandong Province, had handed over some 185 million jin of autumn grain to the state, overfulfilling the 1980 grain procurement plan by 6 percent. [Jinan Shandong Provincial Service in Mandarin 2300 GMT 21 Nov 80 SK]

WINTER WHEAT MANAGEMENT--Jinan, 24 Nov (XINHUA)--Shandong Province had strengthened the management of its 53.9 million mu winter wheat fields. So far, inspection of seedlings has been completed in over 30 million mu. Additional fertilizers have been applied on some 4 million fields. Some 4.9 million mu has been watered. [Beijing XINHUA Domestic Service in Chinese 0125 GMT 24 Nov 80 OW]

CSO: 4007

BUMPER HARVESTS OF GRAIN, OTHER CROPS REAPED

HK250252 Chengdu Sichuan Provincial Service in Mandarin 2300 GMT 24 Nov 80

[Excerpts] Sichuan Province has reaped bumper agricultural harvests this year. According to material compiled by the provincial statistics departments, grain output totaled 65.2 billion jin, a rise of 1.2 billion jin, 1.8 percent, over the bumper year of 1979. Total output of oil-bearing crops including rapeseed, peanuts and sesame was 14.6 million dan, an increase of 12 percent over last year. Total cocoon output was 1.77 million dan, an increase of 19 percent. Total tea output was 630,000 dan, an increase of over 10 percent. The number of porkers sold is expected to reach 32 million, a rise of 4.64 million, 17 percent, over last year. The number of large livestock such as cattle and horses has reached 9.5 million, fruit output was 6.5 million dan, and output of fish and other aquatic products was over 1 million dan, all showing varying degrees of increase over last year. Total value of agricultural output in the province this year may reach 14 billion yuan, a rise of 800 million yuan, 6.4 percent over last year.

Apart from fulfilling the state procurement quotas, the people's communes have registered a relatively great increase in collective and individual incomes. According to material compiled by the provincial statistics bureau from 1,540 peasants households in 32 representative counties that are basc points for rural economic investigation in the plains, hilly and mountain areas, and nationality areas, the peasants increased January-September sales of grain, oil-bearing crops and other agricultural and sideline products compared with the same period in previous years, and average cash income per person during that period was 66.4 yuan, an increase of 10.5 yuan, 18.8 percent, over last year.

The province's rice output this year reached 30.5 billion jin for the first time, changing the situation of varying between 25 and 28 billion jin which had existed for a long time. Rice thus accounted for 46.7 percent of the province's total grain output.

The main reason for the bumper harvests this year was that all localities proceeded from reality and seriously implemented the party's rural policies. Over 95 percent of the rural accounting units have now introduced various

production responsibility systems in light of local production conditions. This has greatly mobilized the production enthusiasm of the peasant masses and produced very good economic results.

The rural areas have further promoted scientific cultivation this year. This has played a notable role in increasing production. Over 10 million mu were sown to fine-strain hybrid rice, while the area of fine-strain hybrid maize accounted for over 90 percent of the total maize area.

CSO: 4007

BRIEFS

HOG SALES--A short commentary in the 19 November SICHUAN RIBAO entitled "Help the Peasants To Solve Difficulties in Selling Pigs," says that the province's peasants will sell a total of 15 million porkers during the fourth quarter of this year. So long as the leadership is resolved to act for the benefit of the peasants, the difficulties in selling such a large number of pigs can be solved. [Chengdu Sichuan Provincial Service in Mandarin 2300 GMT 18 Nov 80 HK]

AGRICULTURAL LOANS--Agricultural banks and credit cooperatives in Sichuan have extended more agricultural loans to help rural areas develop their economies. The amount of agricultural loans extended during the first 10 months this year totaled 1,410 million yuan, of which 540 million was extended to commune and brigade enterprises and to individual commune members, an increase of 184.2 percent over the same period last year. [Beijing Domestic Service in Mandarin 0400 GMT 22 Nov 80 OW]

'BUMPER HARVESTS' REPORTED--The total grain output from the collective production sector in Sichuan this year was the same as that of the bumper year of 1979, even though 3 million mu of farmland were allotted to commune members for their private use and for the production of animal feed this year. About one-quarter (or 10 million mu) of Sichuan's total rice acreage was planted to hybrid rice, and over 70 percent of its total corn acreage was planted to hybrid corn this year. In the first 9 months of this year, in addition to greater consumption of grain, oil and other products, the average cash income of a commune member was 66.40 yuan, an increase of 10.50 yuan or 18.8 percent over the same period of last year. [Beijing RENMIN RIBAO in Chinese 30 Nov 80 p 1]

CSO: 4007

BRIEFS

GRAIN PRODUCTION--According to TIANJIN RIBAO, as of 26 November, Tianjin had prefulfilled its annual plans for procuring grain and edible oils. The grain procurement plan had been fulfilled by 106.1 percent. The edible oils procurement plan has been fulfilled by 122 percent. Procurement of grain and edible oils is in process. [SK280438 Tianjin City Service in Mandarin 0030 GMT 28 Nov 80 SK]

NONSTAPLE FOOD PRICE CONTROL--The Tianjin Municipal Financial and Commodity Price Commissions recently issued regulations on price controls and supplies of major nonstaple foods including beef, mutton, chicken, eggs and fish. The regulations stipulate that on the basis of ensuring a stable supply of foods sold at fixed prices, trade warehouses can purchase or sell these foods at negotiated prices, which should be lower than the price at country fairs and farm and sideline produce markets. Retail stores in particular are warned not to sell fixed-price commodities at negotiated prices. [Tianjin City Service in Mandarin 2330 GMT 16 Nov 80 SK]

CSO: 4007

BRIEFS

DESERT PLANTS STATION--Urumqi, 19 Nov (XINHUA)--Xinjiang's first station for the study of desert plants is thriving in Turpan after 4 years of initial hard work. Although the station covers only 7 hectares, over 50 kinds of exogenous desert plants and shrubs are growing well in their new oasis home. Xinjiang has 400,000 square kilometers of desert, constituting about 40 percent of the total desert area in China. The new station is studying desert plants and the use and control of desert under the joint sponsorship of the Xinjiang Research Institute on Biology, Soil and Desert and the Turpan Sand Control Station. During its 4-year existence, the station has supplied the area with tons of calligonum seed and 200,000 Tamarish and Calligoncm saplings. [Text] [OW211415 Beijing XINHUA in English 0555 GMT 10 Nov 80]

BOOK ON XINJIANG FISH--Urumqi, 17 Nov (XINHUA)--A book systematically describing the varieties, appearance, habits, distribution and evolution of fishes of Xinjiang, has just come off the press. The profusely illustrated book "Fishes of Xinjiang" was compiled jointly by the Institute of Zoology and the Xinjiang Institute of Biology, Soil and Desert Sciences under the Chinese Academy of Sciences and the Aquatic Products Bureau of the Xinjiang Uygur Autonomous Region, based on their research of many years. It was published by the Xinjiang Publishing House. There are about 50 species and sub-species of fish in Xinjiang. Over half are found in the Ertix and Ulungur rivers in northern Xinjiang and the Ili River valley in the northwestern part. Some are rare or peculiar to the region, such as the northern pike and the leuciscus, a kind of sturgeon in the Ili River and hucho trout and long-jaw pike in the Ertix River. Xinjiang is endowed with rich water resources, having 721 rivers and many lakes covering an area of 860,000 hectares. [Beijing XINHUA in English 0701 GMT 17 Nov 80 OW]

EDIBLE OIL PROCUREMENT—By 10 November, Xinjiang had procured 34.45 million jin of edible oil, some 15 million jin more than that procured in the same period last year, and overfulfilling the 1980 edible oil procurement target by 7 percent. [Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 16 Nov 80 OW]

CSO: 4007

BRIEFS

QAMDO PREFECTURE WATER CONSERVANCY--Qamdo Prefecture of the Xizang Autonomous Region has vigorously developed both water conservancy projects and hydroelectricity projects, thereby enabling many commune members to use electric light. As of now, this prefecture has repaired or built 3,578 ditches with a total length of about 5,000 kilometers as well as 721 ponds and reservoirs with a total storage capacity of 2.13 million cubic meters. The total irrigated area in the prefecture reached about 430,000 mu, accounting for 54 percent of the total arable land in the prefecture. [Lhasa Xizang Regional Service in Mandarin 0015 GMT 2 Dec 80 OW]

CSO: 4007

BRIEFS

AGRICULTURAL BANK--Recently the Zhejiang Provincial Agricultural Bank decided to set up trust companies or trust departments throughout the province to facilitate circulation of funds, promote economic integration and strengthen the rural economy. The companies and departments will collect and make payments, raise funds for building factories and pay dividends on a commission basis. They will also accept savings deposits and provide loan service in rural areas. They are entitled to inspect and supervise enterprises which they are entrusted to invest in. [Hangzhou Zhejiang Provincial Service in Mandarin 1100 GMT 19 Nov 80 OW]

FISHERY COMMUNICATIONS STATION--The East China Sea Area Fishery Radio Communications Station of Zhejiang Province was put into operation in early November. This is the biggest and best equipped communications facility on Zhejiang's fishery front. It provides communications between the fishing boats working on the sea and the fishery departments on the bank. [Hangzhou Zhejiang Provincial Service in Mandarin 1100 GMT 21 Nov 80 OW]

AFFORESTATION PROJECTS--The Zhejiang Provincial People's Government has decided to allocate 5 million yuan every year from local financial sources to plant 5 million mu of timber in all parts of Zhejiang. Some 928 commune-run timber farms and 12,400 brigade-run timber farms and full-time work teams have been established in Zhejiang between 1972 and 1979, covering 3.3 mu of afforested areas and employing 150,000 personnel for afforestation and forest protection. The provincial forestry bureau called a meeting of representatives of 300 communes from the hilly areas of 20 counties to discuss plans and measures for establishing 5 million mu of timber. [Hangzhou Zhejiang Provincial Service in Mandarin 1100 GMT 17 Nov 80 OW]

PORK SUPPLY--By the end of October, Zhejiang Province had sold some 7.12 million jogs, fulfilling 104 percent of the annual hogs supply plan. [Hangzhou Zhejiang Provincial Service in Mandarin 1100 GMT 15 Nov 80 OW]

CSO: 4007

II. PUBLICATIONS

TABLE OF CONTENTS OF 'NONGYE JINGJI WENTI', JUL 80

Beijing NONGYE JINGJI WENTI [AGRICULTURAL ECONOMIC ISSUES] in Chinese No 7, 23 Jul 80 p 1

[Text] Table of Contents

Soil Erosion in the Loess Highlands and the Pattern of Agriculture
Sheng Tongsheng [4141 1749 4563] and Ren Jizhou [0117 4949 6650]..... (2)

Preliminary Survey of the Development of Transportation and Communication in Mountain Regions of Yunnan
Tu Jimin [3205 3444 3046]..... (8)

Scientific Treatment of China's Agricultural Traditions
Yi Zhi [2496 0037]..... (13)

Economic Policies and Technical Policies for Agriculture, Forestry, and Livestock Raising Must Be in Accordance With Ecological Laws
Ho Xueyu [0230 1331 3558]..... (17)

Study of Serious Attention to Agricultural Technology Policies
Shen Dazun [3088 6671 6690], Guo Yuhuan [6753 3730 3562], and Li Weiwu [2621 5898 2976]..... (22)

Make the Most of Regional Advantages; Develop Agricultural Production to the Fullest
Wang Weizhang [3769 0251 3361]..... (27)

Apply Economic Laws to the Development of Soybean Production
Wu Leng [0702 1515]..... (29)

Develop Industry in Oils From Woody Plants to Make the Economy of Mountain Regions Prosper
Li Liangsheng [2621 5328 3932]..... (33)

Overcome Single Crop Production in Mountain Areas With Development of Diveraified Businesses in Mountain Areas. Survey of the Restructuring of Production Programs in Mountain Regions of Dayi County, Zichuan Province
Cao Guanghui [2580 0342 2547]..... (36)

Concerning Several Problems in the Northward Diversion of Water From the South.. (39)

Need To Ready a Saddle When Buying a Horse. A Look At the Importance of Coherence of Equipment and Use of Unused Potential in Terms of the Existing Yishui County Water Conservancy Project
Chen Xiyu [7115 1585 3768]..... (41)

Proper Handling of the Relationship Between Accumultion and Expenditure by Communes and Production Brigades
Zhan Qinglan [2069 3237 1526]..... (42)

A Once Over Lightly on Production Team Economic Accounting
Chen Gaoyun [7115 7559 0061]..... (45)

In Agricultural Production, One Cannot Avoid Figuring Economic Costs. Survey of the Economic Analysis Campaign Undertaken in the Gonghua District of Yuanjiang County
Xia Xianshun [1115 0341 5293]..... (48)

Basic Method To Assure Responsibility for Expenditures in Jin County Agriculture and Forestry Bureau, Jin County, Liaoning Province..... (50)

Survey of the Situation in Production Teams in Sichuan Province in Which Average Disbursements Exceed 300 Yuan..... (53)

Problems and Future Course For Construction of Fresh Water Fish Commodity Bases in China
Li Rongsheng [2621 2837 3932]..... (56)

On the Modernization of the Fish Breeding Industry
Xiong Daren [3574 1129 0088]..... (60)

Brief Discussion of Some Cognitive Problems at Combined Agricultural, Industrial, and Commercial Enterprise Test Sites
Wu Yan [0702 4291]..... (61)

Academic Activities

Beijing Region Convenes Symposium On Farm Machinery Technology Economics..... (63)

County in Wenjiang Prefecture, Sichuan Province Sets Up Rural Village Economic Survey Laboratory..... (21)

Agriculture Publishing House To Publish Some Reading Materials on Agricultural Economics..... (63)

"Old China's Rural Economy" Published..... (40)

"Formation and Development of Combined Agricultural, Industrial, and Commercial Enterprises Abroad" Soon To Be Published..... (32)

Letters To the Editor

Why the Greater the Accumulation of Farm Debts the Less Effective Farm Loans... (64)

9432
CSO: 4007

END

JPRS 77174

14 January 1981

China Report

AGRICULTURE

No. 117

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JPRS 77174

14 January 1981

CHINA REPORT

AGRICULTURE

No. 117

CONTENTS

I. GENERAL INFORMATION..... 1

National

Fixing Output Quotas for Farm Households Discussed
(Wu Xiang; RENMIN RIBAO, 5 Nov 80)..... 1

Train Leading Agricultural Cadres in Their 50's
(Xinhua Domestic Service, 25 Dec 80)..... 13

'Radio Beijing' on Tree Protection, Duan Junyi Remarks
(Beijing Domestic Service, 19 Dec 80)..... 15

Chloral Pollution, its Degradation in Soil Studied
(Xu Ruiwei, et al; TURANG XUEBAO, Aug 80)..... 16

Briefs
Agricultural, Sideline Products 24
Meteorological Departments' Restructuring 24
Artificial Insemination of Cattle 24
Earthworm Cultivation Meeting 24
Ground Water Resources 24

Anhui

Briefs
Forestry Policy 26

Gansu

Briefs
Minority Economy, Culture 27
Sheep Breeding 27

Guangdong

Briefs
Overwintering Crops 28
Hainan Island Rubber Production 28

Guangxi

Briefs
Late Rice Production 29
Emergency Meeting 29
Phone Conference 29

Hebei

Briefs
Cotton Production 30

Heilongjiang

Forestry Protection Conference Held
(Heilongjiang Provincial Service, 19 Dec 80)..... 31

Conference Urges Preparations for Plowing, Sowing
(Heilongjiang Provincial Service, 27 Dec 80)..... 32

Briefs
Grain Procurement 34
County Grain 34
Increased Grain Production 34
Grain Procurement 34
Drought Affects Farmland 34
Snow-covered Crops 35
Wasteland Reclamation 35
Farm Output 35

Henan

Briefs
Forestry Conference 36

Hubei

Briefs
Comfort Visits 37
Meeting on Relief 37
Relief Efforts 37
Telephone Conference 37
Forestry Meeting 37
Rat Extermination 38

Hunan

Briefs

Agricultural Production Forum 39

Jiangsu

Briefs

Commune Cadres 40
Vegetable Supply Meeting 40

Jiangxi

Briefs

Fish Breeding 41
Tong Oil Procurement 41

Jilin

Briefs

Jilin Hogs 42
Minor Fall Harvests 42
Cave Cold Store 42
Agricultural Production 42
Grain Conference 42
Oil-Bearing Seeds 43
Agricultural Yields 43
Farmland Conservation Projects 43

Liaoning

Briefs

Cattle Exports 44
Municipal Grain 44
Salt Production 44
Grain Output 44

Qinghai

Briefs

Qinghai Fires 45
Tree Felling 45
Grain Procurement 45
Drought Statistics 45

Shandong

Briefs

Grain, Cotton 46
Cotton Harvest 46
Grain Circular 46
Grain Output 46

Cotton Production 46
Animal Husbandry 47
Grain Yield 47

Sichuan

Briefs
Animal Husbandry 48
Tree Cutting 48
Edible Oil 48

Xizang

Briefs
Meat Prices Reduced 49

Yunnan

Chemicals Used To Induce Male Sterility in Geng Rice
(Xiong Jianhua, Fan Pinggui; YUNNAN NONGYE KEJI, 25 Jan 80).. 50

Briefs
Agricultural Harvests 54

II. PUBLICATIONS

Table of Contents of 'YUNNAN NONGYE KEJI', Nos 1, 3, 1980..... 55

Issue No 1
Issue No 3

Table of Contents of 'ZIRAN ZIYUAN', No 2, 1980..... 59

Table of Contents of 'NONGYE JIXIE', Nos 3-7, 1980..... 61

Table of Contents of 'KUNCHONG XUEBAO', No 4, 1980..... 67

Table of Contents of 'QIXIANG' No 11, 1980..... 69

I. GENERAL INFORMATION

FIXING OUTPUT QUOTAS FOR FARM HOUSEHOLDS DISCUSSED

Baijing RENMIN RIBAO in Chinese 5 Nov 80 p 2

[Article by Wu Xiang [0702 6272]: "The Open Road and the Log Bridge: Origins, Advantages and Disadvantages, Nature, and Future of Fixing Farm Output Quotas for Each Household"]

> [Text] Editor's Note: Recently, in some provinces, municipalities, and autonomous regions, the question of whether farm output quotas should be fixed for each household (including job responsibility for each household) became the subject of widespread discussion among cadres and the masses. The central authorities have already made policy stipulations to benefit work and production.

This essay comments on fixing farm output quotas for each household. In considering actual conditions, it expounds and inquires into the origins, advantages and disadvantages, nature, and future of fixing farm output quotas for each household, and it can serve as a reference. It is hoped that readers with different views will discuss the subject further.

"You take your open road; I'll take my log bridge." Surely it would be undesirable for one to disregard the open road and insist on taking the log bridge. If conditions are not as stated, then the person who says this must have a certain practical and realistic spirit, because he does not blindly follow other people but dares to proceed from local conditions to find his own road. With this indroductory remark, let us discuss the origins, advantages and disadvantages, nature, and future of fixing farm output quotas for each household.

I. Origins

The collective economy is the unshakable and basic economic form of our country's agriculture in its advance toward modernization. After over 20 years of striving, our country's farm collective economy in most places has already consolidated or become more consolidated, and conditions for production have made an initial improvement. At present, in the entire country there are 700 million mu of irrigated area, over 800,000 large and medium-size tractors, a total of 180 million horsepower of various types of agricultural machinery, over 80 billion yuan in the public wealth of commune production brigades, and the total output value of enterprises of commune teams is a third of the total output value of agriculture. As a

whole, a significant development has been made in agricultural production. The entire national population has almost doubled, while the people's living has basically stabilized. Such an achievement should not be underrated. Give the actual conditions in our country, it is not possible to imagine the establishment of modernized agriculture and the realization of a relatively high productive labor and commodity rate on the basis of a small agricultural economy.

However, we also need to recognize that some serious problems exist in our country's collectivization, that is, the cooperative movement, which has experienced both success and some twists and turns.

During the period of mutual aid teams and elementary agricultural producers' cooperatives, the growth of the movement was healthy, due to the emphasis on the principles of voluntary participation and mutual benefit and on the method of setting examples by model. In 1955 the number of semisocialist, elementary agricultural producers' cooperatives in the whole country grew to 670,000 with successive years of increase in agricultural production. Unfortunately, the pace of organizing cooperatives following its high tide in the winter of 1955 was too fast; quite a few places committed the mistake of being too greedy and of resorting to coercion and commandism in varying degrees. At the end of 1955, only 4 percent of the agricultural households were participating in advanced agricultural producers' cooperatives, but by the end of 1956 this had sharply increased to 87.8 percent. In less than 1.5 years, the original plan for the arduous task that would take "10 to 15 years or a little longer" to complete was accomplished. From mutual aid teams, and even under conditions of individual farming, a large number of peasants attained the highest level in one step by directly entering advanced agricultural producers' cooperatives.

Looking back now, we see that the conditions for comprehensively organizing cooperatives at that time had not matured and were not adaptive to the peasants' level of consciousness and the cadres' management standards, and particularly to the level of development of productive forces. Therefore, agitation for "pulling out the cow and withdrawing from the cooperative" appeared in quite a few places in 1957. At that time, emphasis was not placed on proceeding from the standards of development of productive forces and on developing only after carrying out the necessary reorganization and consolidation of the cooperatives. Instead, emphasis was placed on the antiright and on the use of the so-called "great debate of the two roads" to attack the so-called "individual farming style." This sowed the seeds for a subsequent greater mistake "communist style," "proneness to boasting and exaggeration" and "blind commandism," in the 1958 communization movement. The scope of production teams increasingly expanded, and the standards for transfer to public ownership increasingly heightened. It was not until 1961, after the eight-character policy to "readjust, consolidate, substantiate, and improve" was put forth, that small accounting units were reduced in scope, exchange at equal value was emphasized, and "three-level ownership by the commune, the production brigade, and the production team, with the production team as the basic accounting unit," was explicitly stipulated. But in the "four cleanups" movement in 1964, the series of agricultural policies determined by the eight-character policy were regarded as being "rightest" and a "revival of capitalism," and were criticized from top to bottom, creating serious evil consequences.

In that 10-year period of disorder, conditions deviating from productive forces and the mistake of continuously altering productive relations were pushed to the extreme

by Lin Biao and the "gang of four," generally developing its evil nature into pseudosocialism for the poor. This seriously damaged the socialist initiative of the broad masses of peasants to the extent that agricultural production became stagnant for a long period of time and suffered heartbreaking destruction. According to the statistics of 1976 and 1977, the production level of 200 or so counties in the whole country was close to that of the early period of liberation, and in a minority of these it was even lower. This summer, according to the statistics of 5.04 million agricultural village accounting units (a little less than the total), 25 percent had an average individual income above 100 yuan, 27.3 percent were under 50 yuan, and the remaining 50 percent or so ranged between 50 and 100 yuan. The poorest of some of the very poor production teams could not even solve the problems of clothing and food. They could hardly maintain simple reproduction and frequently existed through "reliance on resold grain for food, reliance on loans for production, and reliance on relief for a living." When the collective economy does not run well, the masses lose their initiative, and when the masses lose their initiative, the collective economy does not run well--thus forming a vicious cycle. Struggling in this vicious cycle, the agricultural population has reached approximately 100 million. This is the reality we must directly face.

The causes of this situation are many, but mainly it is due to interference and destruction by the leftist trend of thought and the ultraleftist line. The two most prominent lines are, first: subjectivism in labor management and production command--enlivening "the great call to prosperity" with no right of free choice, fighting wars of attrition and fatigue, and consuming more time with less efficiency. The other one is egalitarianism in distribution--eating out of "the big pot," more work but not more pay, less work but not necessarily less pay, and some who do not work might get more. These two problems are universal and are more serious among those commune teams which have long been backward and impoverished. The peasants of China, who have suffered deeply under the weight of the oppression and ruthless exploitation of the three big mountains of imperialism, feudalism, and bureaucrat-capitalism, are the most reliable allies of the proletariat. Under the leadership of the Communist Party, they have been liberated, have been given land, and have willingly followed the Communist Party along the road of socialism. Even though the collective economy has lost its attractiveness among those commune teams which have long been backward and impoverished, the peasants still have not abandoned the socialist road but spontaneously are striving to find a way to escape the ficious cycle within the permissible bounds of socialism. This is the beginning of fixing farm output quotas for each household.

Earlier in the 3 difficult years, places in many provinces and prefectures of the country had fixed farm output quotas for each household. Anhui promoted "responsibility fields" within the province, which actually meant fixing farm output quotas for each household. Despite subsequent and repeatedly severe criticism, this was either overtly or covertly continued without interruption in certain places. Since the Third Plenary Session of the Eleventh Party Central Committee, the central authorities have emphasized emancipating thinking, relaxing policies, and enlivening the economy, and have defined job responsibility systems to link up with output. In this situation, some production teams that had covertly fixed farm output quotas for each household came into the open and speedily grew in impoverished and backward areas. Fixed farm output quotas for each household appeared time and again; this actually reflected opposition by some of the peasants to leftist policies and lines. Some comrades blamed this on "superficial propaganda" or "promotion by the leadership." Clearly, they have not grasped the key to the problems. Of course,

it is undeniable that the leadership is an important factor, as its support or opposition would make the situation drastically different. However, since fixing farm output quotas for each household has become a demand by the masses, it will be necessary to objectively anlayze economic conditions. Is fixing farm output quotas for each household a log bridge? Can it be crossed, and should we cross it? These have become problems that must be studied in earnest.

II. Advantages and Disadvantages

Why do the peasants of some prefectures strongly demand the fixing of farm output quotas for each household? Simply because it suits the masses in those prefectures for increasing production and improving the necessities of life.

Inspired by the spirit of the Third Plenary Session of the 11th Party Central Committee, over the past 2 years the cadres and masses of commune members in rural areas throughout the country have proceeded from actual conditions, emancipated their thinking, daringly studied, and established diversified forms of job responsibility systems in production. There are two overall categories: one is the short-term job contract with payment according to quotas; the other is the job contract with full responsibility for output quotas, with payment based on related output. Various forms of job responsibility systems play a role in correcting subjectivism and egalitarianism and can therefore bring into play the initiative of commune members. A system of responsibility that is related to output can do this better than one that is not. Moreover, among commune teams that have long been backward and impoverished, fixing farm output quotas for each household or job has more striking results than that for a group. In general, the concrete practice of fixing farm output quotas for each household or job are the "three contracts": contract for a job, production contract to fulfill output quotas, and contract for expenses; and the "three unifieds": the production teams have unified planning, unified accounting, and unified distribution. Two parties sign a contract; those who overfulfill the output quotas will be paid, while those who underfulfill them will be penalized. This method plays a particularly prominent role in changing the face of teams that are backward and impoverished. This has been fully proven not only in certain communes and production teams but also within counties. For example--Feixi County in Anhui; Lankao County in Honan; Dongming County in Shandong; Longxi, Tongwei, and Huining counties in Gansu--all have begun to change their appearance because of fixed farm output quotas for each household or similar types of methods which, together with forceful measures to increase production, have ended the long history of eating resold grain.

This June and July, the State Agricultural Committee organized teams of theoreticians and pragmatists from concerned departments to conduct investigations in over 10 provinces. Despite the divergence of views on the advantages and disadvantages, the economic result of fixing farm output quotas for each household is commonly recognized to be the most prominent among commune teams that have long been backward and impoverished, because their situation can be speedily transformed. From the great amount of investigative materials, the system of job responsibility related to output, particularly the fixing of farm output quotas for individual households, can give better play to the initiative of commune members because of the following advantages:

(1) It can effectively implement the principle of distribution according to work and can assure the material benefits of commune members. Not only can the production part of the contract distribute a reasonable share, but any overfulfilled output belongs to [the members] themselves. The more they work, the higher the payment. Commune members are therefore willing to give fullest play to their potential labor capacity.

(2) It can effectively resist arbitrary and impractical directions and truly realize the democratic operation of the commune. In the past, when the great call for prosperity was enlivened, cadres often were responsible only for the state plan and for the tasks assigned by the higher level. Control was too broad, meticulous, and stifling. It suppressed the zeal and initiative of the commune members. Now that they have taken over economic responsibility for their products and their output, they are justified in resisting arbitrary and impractical directions, and they have the right to use the lowest cost (cost, including physical labor) to obtain the best results and to assure growth in production and income.

(3) It can effectively resist egalitarianism, the indiscriminate transfer of resources, and the taking of more than one's share. These practices had increased the heavy burden borne by the peasants and had greatly dampened their immense enthusiasm for work. In carrying out a system of job responsibility in production, there is no way to equalize and transfer the overfulfilled portion of the output. Commune members know what they are doing with their production contract. With the exception of state-stipulated purchase quotas and that which should be put aside for the collective, it would not be easy to once again practice egalitarianism and indiscriminate transfer of resources. As their labor is not wasted, the peasants have ease of mind.

(4) It can effectively promote business accounting, decreasing costs and increasing labor productivity. In the past, the collective economy was very wasteful; big expenses and high costs were a common phenomenon. Now that responsibility in farming is clearly defined, peasants can suit measures to local conditions and have flexible control; they can in every way make careful calculations and strict budgeting, as well as strive to economize on costs. No longer is there the phenomenon of "the better-off households standing aloof, the crafty households just watching and the honest households being so enraged that they are not willing to do anything," or the phenomenon of the year-round war of fatigue, "working until the last day of the year and starting to work again right after New Year's Eve dinner." As work efficiency increases, it is even possible to find time to develop household sideline production to generate additional cash income.

It should be pointed out that the various forms of job responsibility systems can suit only specific conditions and still await perfection and enhancement. This is even more true in the case of fixing farm output quotas for each household. In adopting this kind of system of job responsibility for backward and impoverished production teams, the resulting increased production is particularly striking, but many new contradictions are also brought about. Some places sum them up as "the ten big disadvantages": disadvantages in the purchase, use, maintenance, and management of large farm tools, in the unified management of the water system and the rational use of water; in the protection of farm cattle, in the prevention of diseases and extermination of insect pests; in experimenting with and promotion of scientific farming; in unified command and concentration of strength to resist

disasters; in unified planning and deployment of manpower to carry out basic construction in agriculture; in the development of commune and production team enterprises and diversified economy; in water and soil conservation; and in the care of the households with the four reliances and households enjoying the five guarantees. Some of the new contradictions are created by decentralized management, but most of them involve problems in work and management. They often occur in places where, in fixing farm output quotas for each household, the leadership allows things to drift. These can be resolved step by step through doing a good job, and are not the inevitable result of fixing farm output quotas for each household. For example, in fixing farm output quotas for each household, some of the production teams of Xuxiaohe Commune of Liuan County in Anhui privately distributed 200,000 jin of grain reserves, leading in three instances to the death of farm cattle. The commune's party committee dealt with the matter in time, further established and perfected various measures, and the situation rapidly improved. Throughout this year, the commune's production brigades and teams have newly purchased 27 head of farm cattle, 1 tractor, 1 automobile, 1 oil press, 35 sprayers, and 122 pieces of large farm implements. The whole commune had planned to turn over a total of 40,000 yuan to the higher authorities but has instead realized 52,900 yuan. It had planned to repay 12,400 yuan in loans but has actually repaid 23,000 yuan. The production teams have 43,000 yuan and commune members have 23,000 in savings unseen in recent years. Due to the growth in production, the public welfare fund of the production teams has increased and the care given to the households with the four reliances and households with material difficulties is better than before. Facts have proven that the most prominent contradiction among backward and impoverished commune teams is commune members having no enthusiasm, so that production cannot expand. Fixing farm output quotas for each household has brought into play the initiative of commune members. As production expands, the food and clothing of commune members are assured. With these basic problems resolved, other problems become easier to deal with. However varied they are, the present new contradictions should be regarded as minor problems, compared to the numerous contradictions created by production that cannot expand. If production does not expand, only general poverty will be created, even if the level of collectivization is higher and "purer" and the distribution is more "equal." In contrast, even if the level of collectivization is not so high or so "pure," [the system should] suit the local conditions of productive forces. There are differences in people's income, however unpleasant this may sound, but in the end, income will inevitably keep pace with the growth of production and everyone will become wealthier. We should weigh the advantages and disadvantages and not to give up eating for fear of choking. Whatever the system of job responsibility, we must strengthen leadership, resolve problems on a timely basis, and continue to perfect and make improvements. If we allow things to drift, even good solutions may give rise to bad results.

III. Nature

Since the advantages of fixing farm output quotas for each household outweigh the disadvantages, and since abundant facts have proven that it has a prominent role to play in changing the face of poor production teams, why is this still being widely discussed to this day? This is primarily because there are differences in the understanding of its nature. Some comrades regard it as an indispensable and important type of diversified job responsibility system related to output. Some feel that it is a mistake in direction, as it turns the collective economy into an individual economy, abandons the socialist path, and retrogresses to individual farming.

In Lenin's view, the basic characteristic of socialism is the system of public ownership and distribution according to work. The system of private ownership gives rise to exploitative relations. The system of public ownership denies the system of exploitation and alone can distribute according to work. Distribution according to work is a form of realization of the system of public ownership. These are the two sides to the question. Only by upholding them do we uphold the direction and path of socialism and basically differ from capitalism and all systems of exploitation. The forms of economic management, the scope of labor organization, and the methods of determining payment can be diverse and should be determined according to actual conditions. We cannot arbitrarily say that this type is or is not socialism. It is regrettable that serious confusion has been created in theory and thought because of repeated criticism of the "three self-responsibilities and one contract." Critics regarded pseudo socialism, which is destructive of distribution according to work, as being the only form of socialism, and regarded the good solution, distribution according to work in accordance with actual needs, as being a capitalist restoration. In the course of time, it looked as if fixing output quotas for each household meant distribution of land for individual farming, which in turn was the practice of capitalism. The sight of the word "contract" was more fearsome than the plague. Actually, even the distribution of land for individual farming is not equivalent to the practice of capitalism. Under conditions of capitalism, small-scale farming by individual owners may develop toward capitalism, but this generally cannot happen under socialist conditions. Furthermore, it is a fact that fixing farm output quotas for each household is not equivalent to distributing land for individual farming. We might as well briefly compare the two here:

(1) Distribution of land for individual farming has already broken away from collective economy and has no rights or obligations in it. Fixing farm output quotas for each household is an economic relationship in the collective economy. As a prerequisite, it recognizes the existence of the production team. Its principal economic component is the "production team," and its contractor is the "household." The "production team" uses a "contract" to establish a relationship with the "household" in order to strengthen its management responsibility in it. Each of the two has rights and obligations.

(2) In distribution of land for individual farming, the means of production belong wholly to the individual and are based on the system of private ownership. The means of production, when farm output quotas are fixed for each household, still belongs to the collective. Commune members have only the right to use but not to own the land. Production teams can carry out necessary readjustments regularly or irregularly. The right to own farm cattle and large farm implements also belongs to the collective. After being evaluated, they are handed over to commune members to use or to be used in common by several households. The users have to compensate the production teams for what is consumed, according to the originally fixed value, within a specific period of time.

(3) Distribution of land for individual farming is an individual undertaking in which one assumes sole responsibility for one's own profits or losses and in which one supports oneself by one's own labor. Fixing farm output quotas for each household still upholds the production team as the basic accounting unit. Products from the production part of the contract are centrally distributed by the production team. When doing so, the production team must first deduct production costs, man-

agement expenses, accumulation funds, and public welfare funds before making distributions to individual commune members. Output in excess of quota is the result of overfulfilled labor by commune members, and they are rewarded for it. This is precisely what further realizes the principle of distribution according to work.

From the above comparisons, it can be seen that fixing farm output quotas for each household is substantively different from distributing land for individual farming. On the basis of the system of ownership by the collective, it adopts a method of organized management and a system of job responsibility in the course of production according to the principles of unified planning and accounting. It is similar to the piece rate wage system in industry, and it is relatively easier to assess the fruits of labor. It is a type of management or accounting method that more directly realizes the principle of distribution according to work.

The fixing of farm output quotas for each household, unlike its rather unitary form during the 3 difficult years, has diversified forms suitable to local conditions. Basically, there are three types: first, fixing output quotas of some crops for each household or labor unit; second, fixing output quotas for an entire plot of land for each household or unit, while upholding unified accounting and distribution; third, fixing output quotas for an entire plot of land for each household or labor unit, with commune members having responsibility for output. [In this third type,] individual shares will not be subject to unified distribution by production teams, other than what must be turned over to the state (purchase) and the collective (collective accumulation and social burden)--that is, the "overall job contract" or the "job contract for each household." These are simple and convenient forms that are welcome by the masses. But there is no unified accounting or distribution, and thus production teams can easily become lax and slide into individual farming. Therefore, fixing farm output quotas for each household, particularly for commune teams with task responsibility for each household, particularly for commune teams with task responsibility for each household, should, through work and discussion among commune members, accomplish the following: (1) protect the wealth of the collective and not destroy it by equal distribution; speedily determine forestry rights, forbidding improper felling of trees; (2) reaffirm the ban on purchase and sale of land, the hiring of laborers, and usury; (3) properly make arrangements to care for families of armymen and revolutionary martyrs, households enjoying the five guarantees, and other families with material difficulties; (4) preserve, as much as possible, certain collectively operated production items which were originally welcome by the masses and which show good economic results; (5) production teams and commune members must strictly fulfill their own obligations, while debts and creditors' rights must be earnestly cleared up; (6) maintain the organization of production teams and strengthen the central role of various levels of party organization. Merely by achieving this, various forms of farm output quotas for each household can give further play to their positive role, which is beneficial to the consolidation and growth of the collective economy. Therefore, fixing farm output quotas for each household is not a log bridge at all. Like various forms of job responsibility systems, it is the open road of collective economy. If we must compare it to a log bridge, then we can say that if one lived in a ravine among remote mountains, it would be impossible to move and advance if one did not cross the log bridge, and it would be impossible to get onto the level and open road. In such a situation, one crosses the log bridge precisely in order to take the open road. In some places, commune members used to strongly demand that farm output quotas be fixed for each household because this could increase output and

satisfy their hunger; some comrades resolutely opposed it because they felt that the direction was incorrect and they were afraid of criticism. This resulted in the so-called contradiction between direction and output. Actually, direction and output should be consistent. If output cannot be increased, how can direction be correct? In the novel "Pilgrimage to the West" ["Xiyouji"], when the Monk recited the Incarnation of the Golden Hoop, the Monkey King would get a headache. Now when there is a demand to establish various systems of job responsibility, and when backward and impoverished commune teams demand fixed farm output quotas for each household, some comrades likewise get a headache for fear of being "rightist," of being "retrogressive," and of "committing an error in direction." This clearly shows that we are still wearing the Golden Hoop and that our thinking is not yet emancipated. We should have a clear understanding that in outlying mountainous prefectures and impoverished and backward prefectures, the implementation of fixed farm output quotas for each household is a necessary measure for linking up with the masses, expanding production, and solving the problems of clothing and food. In the absolutely favorable conditions of socialist industry, socialist commerce, and collective agriculture in the whole country, fixing farm output quotas for each household under the leadership of production teams will not cause a derailment from the tracks of socialism. There is no danger of restoring capitalism, and there is nothing to be feared.

IV. Future

Our country's territory is vast, its economy is backward, and its development is very unbalanced. As agricultural production differs from industrial production, many aspects suffer from restrictions of natural conditions. This therefore demands that agricultural production must uphold the policy of suiting measures to local conditions and must have greater suitability and flexibility in management and administration. At any place, in any commune team, or even within the same production team, we should proceed from actual needs and actual conditions and permit the simultaneous existence of diversified forms of management, labor organizations, and methods of assessing payment. We should support whatever form of job responsibility system is good and workable, provided it benefits and encourages producers to the fullest extent, and provided it results in an increase in production, income, and commodities. We cannot rigidly adhere to one form and practice "cutting with one broad stroke."

In outlying mountainous prefectures as well as in impoverished and backward ones where the level of productive forces is low and where the masses have great difficulty just to stay alive, the masses can be allowed to have fixed farm output quotas or job responsibility for each household if they so demand. Stability should be maintained for a relatively longer period of time.

For prefectures in general, when the collective economy is relatively more consolidated and production has expanded, fixed farm output quotas should not be set for each household. The energy of the leadership should be placed primarily on further consolidating and expanding the collective economy. Short-term job contracts and payment according to quotas should be practiced. If quotas are reasonable and checking and acceptance are carried out in earnest, this [system] can also determine the quantity and quality of labor relatively more in accord with actual conditions and provide a relatively more reliable basis for distribution according to work. Compared to rigid recordkeeping, rigid distribution, and unrestrained criticism,

this type of job responsibility system is much more scientific and suitable to places where the level of management is relatively higher. Some places practice the fixing of farm output quotas for each group, with payment according to related output. What satisfies the masses, or what can satisfy them after improvement, should be allowed to be stabilized and should continue to be perfected and enhanced.

At present, about 20 percent of the teams in the whole country practice fixed farm output quotas for each household. There are teams that are suitable for it but do not practice it, and there are teams that should not practice it or that can do without it but still practice it. The latter type of commune teams must be allowed to experiment for a couple of years so that practice may be used for summation. Even if the results are not good, this will be limited to only a very few places. If they are good, some new experiences may be sought out.

Commune teams with medium economic and management levels account for more than half of the number of teams in the whole country. This commune teams have many variable internal factors and are susceptible to external influences. By strengthening the work of this type of commune teams alone, we can stabilize the overall situation and promote the entire development of agricultural production. For this type of commune teams, if the current forms of job responsibility systems satisfy the masses, or may satisfy them after improvement, it is better to stabilize them and continue to perfect and enhance them, rather than freely alter them.

Following an expansion in agricultural production and an increase in the level of productive forces, job responsibility systems may undergo corresponding development and changes. Such changes do not start with higher and proceed to lower levels. They are not administrative commands, but are inevitable demands brought about by the growth of development itself. Recently, contracts for specialized trades and job responsibility systems paid according to related output have appeared in many places, one after another. They are systems of job responsibility with good prospects for development. In actual practice, under the unified leadership and management of the production team, there is cooperative division of labor. Labor forces skilled in agriculture should divide the responsibility for fields according to their capacity, and labor forces skilled in forestry, animal husbandry, sideline production, fishery, industry, and commerce should divide the responsibility for different trades according to their capacity. Job contracts for different trades should be fixed for groups, labor, and households according to the principle of facilitating production and management. The production team should unify or assign them various tasks in the course of production according to suitability. Output responsibility should be centrally assigned; overfulfillment and underfulfillment should be rewarded or penalized accordingly. Contractual forms should be used to determine unchangeability for the particular year or several years. Unprecedented progress has resulted from adopting such methods in, for example, the Mengjiaping production team of Mizhi County in Shaanxi, the Dongzhuang production team of Jixian County in Shanxi, the Hungxing production brigade of the Hanggin Hou Banner in Nei Monggol Autonomous Region, and the Zhaojia production team of Lingling County in Hunan. It can be seen from these exemplary models that this type of job responsibility system has an outstanding advantage, compared to fixing farm output quotas for each household or other forms of job responsibility systems that are common, "small, and complete." Not only can it satisfy the demands of commune members in payment according to related output and give play to the initiative of the individual engaged in production, but it can also give play to the advantages of unified

management and cooperative division of labor in the collective economy, thus combining and unifying the two. It favors the growth of diversified management; the popularization of scientific farming and the promotion of commodity production; the maximization of human talents, material usefulness, and land yield; and care for family sideline production by commune members and suitable arrangements for the production and livelihood of households with the four reliances and families with material difficulties. These forms not only suit prefectures with material difficulties, but they can also keep pace with the increase in productive forces and production items and can develop toward a higher level of job responsibility system, with a division of labor among specialized trades that has a stronger character of socialization.

On the basis of their original field management and individual responsibilities, some agricultural production teams that have developed rewards and penalties according to related output also possess certain advantages of contractual responsibility for specialized trades and a job responsibility system, with payment according to related output, that is more familiar and acceptable to the cadres and the masses.

Some commune teams in Jiangxi, Zhejiang, and the northeast, as well as the suburbs of big cities, where diversified management is relatively more advanced and the level of mechanization is relatively higher, have already broken through the bounds of the production team by having the production brigade or even the commune as the unit for carrying out a job responsibility system with contractual responsibility for specialized trades and payment according to related output. This is a new development. In the suburban Xijiao Commune of Jinzhou Municipality in Liaoning, the commune members of 580 households this year carried out such a system and launched a great expansion in agriculture, animal husbandry, and sideline production. For example, the four production teams of Tangzhuangzi production brigade have five milk cows. Last year, the cows were raised by two team members and produced a total of 8,200 jin of milk and a total income of 1,500 yuan. After deducting workpoints and fodder, the team paid a compensation of 1,000 yuan. This year the responsibility was assigned to the family of Ren Zhongshan [0117 1813 0810], resulting in an output of 20,000 jin of milk and an income of 4,600 yuan for the whole year. Compared to last year, over 11,000 more jin of milk have been turned over to the state, there are 2,500 more yuan in income for the collective, and an individual net income of 1,600 yuan has been earned.

In the course of establishing job responsibility systems in production, two gratifying new developments have occurred. One is the production contract. In 1978 a minority of commune teams, which first tried it out in launching the great job contract style of job responsibility system related to output, were ridiculed for "fighting a sham war but actually just making noise." Practice has proved the results to be very good, however, and many commune teams have enthusiastically put it into use and have step by step found more systematic experiences. It has turned the old habit of sole reliance on administrative commands into the use of economic methods to lead the economy. If it continues to expand, it may open up a new situation for work in rural areas. The other [new development] is a job responsibility system with contractual responsibility for specialized trades and payment according to related output. It combines and unifies the advantages in the collective economy and the initiative and enthusiasm of commune members. Thus it possesses immense vitality and can develop into the central form of job responsibility system of agricultural production, opening a new path for the administration and management of the collective economy and even for the modernization of agriculture in our country.

Ever since the basic completion of socialist transformation in the system of ownership of the means of production, we have long felt that the problems concerning our country's economic structure have been completely resolved. That is, in the coexistence of the two kinds of socialist systems of ownership, the system of ownership by the whole people and the system of ownership by the collective, each requires only one form. This clearly does not accord with the actual conditions of expansion of productive forces in our country. This kind of undertanding not only fails to give play to the advantages of socialism but also destroys them. We must break old habits, emancipate our thinking, daringly study, and, with the prerequisite of the absolute superiority of the means of production in the system of public ownership, allow a specific number of other supplementary aspects to exist, adopt diversified forms of management, open up competition, and develop a commodity economy. Without highly developed commodity production, there will not be great socialized production. Socialism can be established only on the basis of highly developed, great socialized production. Therefore, be it a log bridge, a plank bridge, a stone bridge, or a chain bridge, as long as it can be crossed we will utilize, transform, and develop it. Only in this way can we emerge from the remote mountains crisscrossed by ravines, reach the flat and wide open country, and advance along the golden open road.

9586
CSO: 4007

TRAIN LEADING AGRICULTURAL CADRES IN THEIR 50'S

OW261314 Beijing Xinhua Domestic Service in Chinese 1308 GMT 25 Dec 80

[XINHUA Article: "Importance Must Be Attached to On-the-Job Training of Leading Agricultural Cadres in Their 50's--Sidelights on First Term of Study and Research Class for Leading Agricultural Cadres"]

[Excerpts] Beijing, 25 Dec (XINHUA)--The first term of the study and research class jointly sponsored by the State Agricultural Commission and the CCP Central Committee's organization department for senior leading agricultural cadres opened on 11 November and ended on 25 December. It was attended by 46 leading agricultural cadres from various provinces, municipalities and autonomous regions. They assiduously studied courses on the modernization of China's agriculture, basic agricultural science, agricultural economy and other courses. It has enhanced their technical ability in guiding agricultural production according to the laws of nature and economy. Commenting on what they learned, they are unanimous that one important measure called for by the modernization of agriculture is to pay attention to on-the-job training of leading agricultural cadres, particularly those in their 50's.

There are a great many leading cadres in agricultural departments at various levels who are now in their 50's. Through protracted tempering in the revolution and years of leadership work in the field of agriculture, they have on the whole acquired abundant practical experience and a fairly high proficiency in policy implementation and organization skill. Also, they are still sufficiently energetic. They possess valuable leadership talents. All that is lacking is professional knowledge. Let them make up this missed lesson in professional knowledge as quickly as possible and they will be able to find still greater scope to play their role.

Is it possible for leading cadres in their 50's to raise the level of their professional knowledge in a short time? It certainly is; the performance of the students in the study and research class is eloquent proof. With an average age of 56, each of the 46 students eagerly delved into their studies and none was absent from the class throughout the 1 and 1/2 months the class lasted.

In their long experience in leading the peasants to strive for high yields, many of the leading cadres had a few setbacks and learned many lessons. However, they have not been able to sum up their experience well. This time they realized through study of the basic principle of the ecological system of agriculture that what was

wrong was they paid attention only to wresting high yields from the crops. They neglected the need to provide necessary light, heat, water, air and nutrients for the crops and did not understand they should act in accordance with the law of overall balance in leading agricultural production.

There is great urgency now to build a contingent of cadres who are young, professional and knowledgeable. While striving for this goal, we must never overlook the training of the large number of leading cadres in their 50's. If this is overlooked, we will suffer losses in the structure of the ranks of cadres and in the drive for agricultural modernization. According to the students who attended the study and research class, there is a tendency to neglect leading cadres in their 50's in some localities. It is alleged that these cadres "are a little too young to be retired, but a little too old to be drawn into the leading bodies and can only be used for another few years. That is all." This viewpoint is totally wrong. It is not good to hold this view. We must create the conditions needed to step up the training of the leading cadres in their 50's in order for them to join the young and middle-aged cadres and give full play to their remarkable skills in the drive for agricultural modernization.

CSO: 4007

'RADIO BEIJING' ON TREE PROTECTION, DUAN JUNYI REMARKS

OW?11817 Beijing Domestic Service in Mandarin 1200 GMT 19 Dec 80

[Text] All Provincial, Municipal and Autonomous Regional People's Governments are attaching great importance to the urgent circular issued by the State Council on banning indiscriminate, excessive felling of trees. They have taken immediate and serious actions to implement the circular. Various provinces, municipalities and autonomous regions have generally put forward specific measures for protecting forests in connection with their actual situations. They include Guangxi, Guangdong, Henan, Jiangsu, Jilin, Nei Monggol, Ningxia, Qinghai, Yunnan, Sichuan, Shandong, Xizang, Jiangxi, Shanxi, Liaoning, Zhejiang, Gansu, Anhui, Hunan, Guizhou, Xinjiang, Hubei, Hebei and Beijing.

Sichuan Province has proposed the following measures: The felling organizations whose operations have not been approved by provincial authorities and felling organizations that are not operating according to plan should immediately stop their operations, freeze their products and await instructions from higher authorities. To sum up the experiences and lessons gained by Liangshan, Garze and Aba autonomous prefectures in keeping collective forests, work on setting aside collective forests should be temporarily suspended.

At a meeting of the Party Standing Committee and the governor of Henan Province, Duan Junyi, first secretary of the Provincial Party Committee, called on all localities to pay more attention to handling cases of damaging forests. He criticized the secretary of the Lushi County Party Committee for abusing his authority by making furniture with public timber and giving it to friends as gifts.

Working groups, organized by the forestry departments, public security organs, procuratorates and courts in many provinces, municipalities and autonomous regions, have gone to grassroots units to help them implement the instructions issued by higher authorities.

In addition, four working groups, organized by the Ministry of Forestry and led by its vice ministers and advisors, have gone to such provinces as Hunan, Guizhou, Heilongjiang, Jilin, Jiangxi and Gansu to supervise local governments in seriously implementing the urgent circular issued by the State Council.

CSO: 4007

CHLORAL POLLUTION, ITS DEGRADATION IN SOIL STUDIED

Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINCA] in Chinese Vol 17 No 3, Aug 80 pp 217-226

[Article by Xu Ruiwei [1776 3843 5633], Qian Wenheng [6929 2429 1854], Sun Hanzhong [1327 3352 0022], and Zhao Jiahua [6392 1367 7520] of the Nanjing Pedology Institute of the Chinese Academy of Sciences: "Chloral Pollution and Its Degradation in Soil"; Song Jie [2051 2212], Li Deping [2621 1795 1627], Jin Wei [7246 0251] and An Qiong [1344 8825] participated in the experimental work]

[Excerpts] Chloral is an important organic synthetic material and it is widely used by the farm chemicals industry and factories are distributed throughout the nation. Because of the inappropriate disposing of the three wastes, the environment has been frequently polluted. In 1974, over 60,000 mu of wheat were damaged in the Hangu Ward of Tianjin and over 20,000 mu produced no harvests. The incident was serious. It was caused by pollution of the source of irrigation water of the Suyun River by chloral containing waste water.[1] Similar happenings also occurred in Beijing, Xian and Zhengzhou.[2,3] Many commune-operated factories in Jiangsu, Zhejiang and Yunan have utilized waste sulfuric acid containing chloral to produce calcium superphosphate fertilizer and have caused damage to farmland. In Kunming, an incident of chloral polluting the source of drinking water and causing damage to people's health even occurred. This is a type of pollution by our nation's farm chemical industry that causes relatively great damage.

The chemical properties of chloral are unstable. It was discovered in the surveys of farmland pollution that chloral in the polluted soil dissipates relatively fast. But even when all the chloral in the soil has dissipated, within a relatively long time, crops planted as supplementary crops in the soil still show signs of poisoning. It can thus be seen that a clear explanation of the patterns of conversion of chloral in soil has obvious practical significance. In recent years, some studies have been conducted in our nation on the signs of poisoning by chloral, monitoring and measurement methods, and standards of water quality.[1-5] There are more studies being conducted abroad in chloral chemistry, techniques of analysis and determination, plant physiology and water pollution but there have been few reports on soil pollution by chloral. This article studies the activities of chloral in the soil and the major conversion products and the cause of continued damage to crops after dissipation of chloral has been determined. The article also discusses the degradation mechanism of chloral in the soil.

I. Experimental Materials and Method

Soil sample: The soils for testing were salinized meadow soil (from the Hangu Ward in Tianjin), paddy soil (from Guangzhou), and red earth (from Jinxian in Jiangxi).

(I) Degradation Experiment

1. Laboratory incubation experiment: Fifty grams of wind dried soil (sifted through a 20-hole sieve) was placed in a 100-milliliter triangular flask and a definite quantity of chloral and water solution were added to obtain a specific experimental concentration (25 and 800 milligram/jin of soil). The dampness of the soil sample was maintained at the same level as the moisture content in the field. Incubation was performed in a thermostatic chamber (20°C and 32°C). Samples were taken at regular intervals (three repetitions each time). The contents of chloral and its major degradation products were measured at different times. Sterilized soil was used for parallel contrast experiment.

2. Pot incubation in thermostatic chamber and pot planted wheat experiment: Each pot contained 1.5 jin of soil. Chloral solution was added to the predetermined concentration. Wheat was then sown at different periods of degradation (the 1st, 5th, 20th, 50th, 70th and 100th day). The contents of chloral and its major degradation products in the soil at the time of sowing were measured and the growth situation of wheat was recorded at the same time.

(II) Method of Analysis

1. Gas-chromatography of chloral in soils. Procedures of extraction: A sample of 50 grams of soil was used and extraction was performed by shaking the water and soil mixture of 1:1 ratio; 10 milliliters of water phase mixture and 15 milliliters of petroleum ether: ether = 2:1 mixed solvent for extraction 3 times. The extracted liquid was combined with and dehydrated by 5 grams of mercuric sodium sulphate, the volume was fixed and prepared for chromatographic measurements.

Chromatographic conditions: The SP 2305 model gas chromatograph with a deuterium-scandium electron capturing and detecting device and 10 percent silica oil No 1/acid washed 101 white carrier body was used. The inner diameter was 4 millimeters, the glass column was 2 meters long, the entry sample temperature was 160°C, the column temperature was 100°C, the detector temperature was 160°C. The lowest concentration detected by this method was 0.01 milligram/jin of soil.

2. Determination of Trichloroacetic acid in the soil by head space chromatography.[6] The soil sample was extracted by shaking in a water solution of a ratio of 1:1. One milliliter of water sample was siphoned into a 25 milliliter flask with a small opening, then 1 milliliter of concentrated sulphuric acid was added. A silica-rubber stopper was used to seal the opening. Nitrogen gas was then piped into the flask to vacate the air, then a syringe was used to inject through the silica-rubber stopper 0.1 milliliter of methyl alcohol and then the flask was set in 60°C water bath for esterification in thermostatic

conditions for 3 hours. Then a syringe was used to extract 0.25 milliliter of vapor from above the surface of the solution in the flask. Chromatographic entry of sample, chromatographic conditions and instruments were all the same as those used in determining chloral. The lowest detected concentration by this method was 0.01 milligram/jin of soil.

3. Products of degradation of chloral-joint analysis of trichloroacetic acid by chromatography-mass spectroscopy. This was conducted on the MS50 model chromatograph-mass spectroscope. We took 800 milligrams/jin of soil containing chloral and 50 grams of soil sample incubated for 10 days in a pot for extraction in distilled water of 50 milliliters. The aqueous sample was then treated for esterification by the head space chromatographic method for trichloroacetic acid. Then we used a syringe to siphon 1 milliliter of vapor sample above the surface of the liquid for chromatographic-mass spectroscopic measurements.

II. Experimental Results and Discussion

(I) Activity of Chloral in the Soil

The content of chloral in the three test soils varies with time. Chloral can dissipate relatively quickly in different soils, and it dissipates the fastest in the salinized meadow soil of Tianjin. Within 2 days, it dissipates almost completely. The next fastest occurs in the paddy soil of Guangzhou and the slowest in red soil of Jiangxi. The rate of dissipation in a 10-day period in the latter 2 types of soils was 99 and 80 percent, respectively.

Other environmental factors of the soil also affect the rate of dissipation of chloral. When the temperature of the soil rises, the rate of dissipation quickens. The retention period (time needed for 99 percent to dissipate) of chloral in the salinized meadow soil of Tianjin was 24 hours at 32°C and 48 hours at 20°C. When the initial concentration of chloral in the soil rises to 800 milligrams/jin of soil, dissipation at the beginning is slower but the process hastens after 48 hours.

(II) Major Products of Conversion of Chloral in the Soil

1. Determination of the products of conversion. When using the chromatographic method to quantitatively observe the dissipation activities of chloral in the soil, it was discovered that soil containing chloral and incubated showed a peak at retention time 2'07" on the chromatogram not seen on the chromatogram of the original soil. As the time of incubation increased, the chloral peak at 1'05" dropped and the peak at 2'07" increased. The increase and decrease of the two peaks were closely related. The chromatographic retention time measurements preliminarily showed that the peak was the same as that of the sample of trichloroacetic acid (abbreviated TCA). Since trichloroacetic acid easily produces esters, the derivative chromatographic retention time measurement method was used as a test. The liquid extract of polluted soil was subjected to esterification in methyl alcohol and determined by head space chromatography. The experimental results showed that the retention time of the chromatographic peak of

polluted soil after esterification was exactly the same as that of the peak of the esters of the sample of trichloroacetic acid. Joint analysis by gas chromatography-mass spectroscopy was used to further analyze and determine[7] the unknown peak formed in the chromatogram of polluted soil. The results showed that the characteristics of the mass spectrogram of the derivatives of esterification in the undetermined portion separated by gas chromatography of polluted soil were consistent with the characteristics of the mass spectrogram of the sample of trichloroacetic acid and the documented standard mass spectrogram. It can thus be concluded that chloral in the soil was converted to trichloroacetic acid in the process of degradation.

2. Activity of the products of conversion--trichloroacetic acid in the soil. The salinized meadow soil of tianjin and red earth of Jinxian of Jiangxi are two soils that have relatively great differences in their physical, chemical and microbiological characteristics. The activities and processes of the conversion of chloral into trichloroacetic acid in these two soil samples were observed. As the amount of chloral in the soil reduced, 0.62 milligram/jin of soil of trichloroacetic acid was detected in the salinized meadow soil of Tianjin in the fourth hour. On the fourth day, the highest value was reached (about 76 percent of the initial concentration of chloral) and then it gradually lessened. Dissipation occurred about the 70th day. Trichloroacetic acid was not detected on the fourth hour in red earth of Jiangxi, but 0.12 milligram/jin of soil of trichloroacetic acid was detected in the 12th hour, and the highest value was reached on the 9th day (about 56 percent of the initial concentration of chloral), and dissipation occurred about the 100th day. It can thus be seen that chloral can convert to trichloroacetic acid in different types of soils and the trend of dissipation is similar but the rate of dissipation and the rate of conversion are visibly different.

(III) The Affect of Chloral and Its Product of Conversion--Trichloroacetic Acid Upon the Growth of Crops

Chloral is called a growth disorganizer in plant physiology. It can destroy the polar structure of the protoplasm of plant cells and differentiation, disorganizing cellular and nuclear division, forming diseased tissues and hindering normal growth. Experiments of potted plants show wheat is very sensitive to chloral. When the concentration is above 0.5 milligram/jin of soil, wheat plants become stunted and the leaves curl. The symptoms are visible. When the concentration is above 1.5 milligram/jin of soil, the yield is visibly affected. When the concentration is above 5 milligram/jin of soil, the leaf sheath increases in thickness after the wheat seedlings emerge from the soil, and most of the new leaves of the plants (the first true leaf) cannot emerge fully and gradually wilt. When the concentration in the irrigated water is above 5 milligram/liter, visible damage to paddy rice is caused. The results of the experiment of potted plants show the concentration of trichloroacetic acid that causes damage to wheat and the symptoms of poisoning thus caused are similar to those of chloral.[8,9]

Incubation and pot planting experiments show that wheat sown during different periods of degradation (the number of days of incubation after chloral has been added to the soil) will manifest visible differences in growth due to different contents of chloral and trichloroacetic acid in the soil.

Wheat sown on the first and the fifth days after degradation begins is most seriously damaged. But the direct cause of damage of the two are different. In the soil sown on the first day, the concentration of chloral is very high, and the damage is mainly caused by poisoning by chloral. In the soil sown on the fifth day, chloral has completely dissipated but damage to wheat is still very serious. The content of trichloroacetic acid in the soil is relatively high (11.0 milligram/jin of soil). Wheat sown on the 20th and the 50th days is damaged to gradually lesser degrees. At the time of sowing, the content of trichloroacetic acid in the soil is 4.5 and 1.5 milligrams/jin respectively. Wheat sown on the 70th and 100th days can grow normally. At the time, the concentration of trichloroacetic acid in the soil had already dropped to below 0.5 milligram/jin. This shows that after the chloral in the soil has dissipated, the degree of damage to wheat is closely related to the content of trichloroacetic acid. Damage is increased when the content of trichloroacetic acid is high. Only when the soil does not contain either chloral or trichloroacetic acid (or the concentration is below 0.5 milligram/jin), will the plants be able to grow normally. In the investigation of the incidence of pollution in Taixian, Jiangsu, we also detected the conversion product trichloroacetic acid in the soil. Supplementary crops planted in fields containing trichloroacetic acid will continue to show signs of poisoning. It can thus be seen that since trichloroacetic acid is strongly poisonous to crops, and it is retained in the soil for a definite period, it is the main cause that continues to damage crops for a relatively long time after chloral in the polluted soil has dissipated.

(IV) Discussion of the Mechanism of Degradation of Chloral in the Soil

1. The process of degradation of chloral. The C-C molecular bond of chloral molecules easily breaks because of the effect of attraction of the trichloromethyl electron. In air and sunlight, it can decompose by oxidation to HC , Cl_2, CO_2 and H_2O. In alkaline solutions, it decomposes to chloroform and formic acid. The density of the electron cloud of the C-H bond on the aldehyde radical of the chloral molecule is relatively low and the oxidation ability is weaker than acetaldehyde. The latter can oxidize automatically in air while chloral can only oxidize to become trichloroacetic acid under the action of definite reagents (such as nitric acid, sodium hypochlorite). But the experimental results we obtained showed that the soil environment was different, and when chloral degraded in soil, trichloroacetic acid was formed first, not products of direct breaking of the C-C bond nor of dechlorination reactions.

Sterilized soil experiments showed the specificity of the degradation process of chloral in the soil environment was closely related to microorganisms. When chloral was added to sterilized soil, as long as the sterile environment was strictly maintained during the operations, trichloroacetic acid did not form at any time during the course of incubation. But when a solution of non-sterilized soil was inoculated into the sterile soil, trichloroacetic acid was formed. This shows trichloroacetic acid is formed by microorganic activity and is a product of biological oxidation.

2. Compositional characteristics of microorganisms in the soil and degradation. Chloral can convert to trichloroacetic acid in the three types of different soils. This shows that microorganisms that can produce such a reaction process exist in common in various types of soils. The amount of bacteria in the salinized meadow soil of Tianjin is higher than those in the red earth of Jiangxi by two numerical orders, and when compared, the former's constant of the rate of dissipation is visibly higher than the latter. It seems that these two are closely related and this shows that in microbiological composition, bacteria are more beneficial for this type of oxidation.

The pH values of the three types of soils tested differ relatively greatly. The constant of the rate of dissipation is higher when the pH value is higher. Considering the mechanism of biological degradation, an appropriate explanation would possibly be that the pH value has affected the characteristics of the microbiological domains, and the latter in turn determines the constant of the rate of dissipation.

3. The activation energy of the manifestation of dissipation reactions of chloral in the soil. According to the Arrhenius equation, the activation energy E can be calculated from the values of the constants k_1 and k_2 of the rates of two different temperatures (T_1 and T_2). The formula is:

$$\ln \frac{k_1}{k_2} = \frac{E}{R} \cdot \frac{\Delta T}{T_1 \times T_2} .$$

A sterilized soil sample and a nonsterilized soil sample of the salinized meadow soil of Tianjin were incubated under two different temperature conditions (20°C and 32°C). The values of k obtained from the lnC--t curve were then used to compute the activation energy. The activation energy of the sterilized soil was 23 kilocalorie/mole. That of the nonsterilized soil was 5.8 kilocalorie/mole. The activation energies differed greatly, showing that the course of the reaction of dissipation of chloral under the two conditions were not the same. The constant of the rate of dissipation in sterilized soil changed greatly with temperature, manifesting a high activation energy, and was thus a typical chemical degradation. In nonsterilized soil, the changes in the constant of the rate of dissipation due to temperature changes were relatively small, manifesting a relatively low activation energy, and reflecting characteristics of biological degradation. Because participation of biological enzymes can change the speed of chemical reactions and reduce activation energy, chloral in the soil can easily oxidize to become trichloroacetic acid. The conversion rate to trichloroacetic acid in the degradation experiment is relatively high (56 and 76 percent). This shows that this type of biological oxidation reaction is the major reaction of dissipation of chloral in the soil. It can be seen in the activity curve of chloral and its product of conversion, trichloroacetic acid, that after all or most of the chloral in the soil has dissipated, the highest value of trichloroacetic acid is reached slightly later, showing that there may possibly be transient type products in the course of conversion. It can be imagined that a certain compound is first formed and then trichloroacetic acid is formed. Because the reaction rate of the latter is slower than

the former, the phenomenon in which chloral dissipates first and trichloroacetic acid is formed later occurs. This hypothesis is consistent with the hypothesis in enzymology, stating that the reactants first form a compound with enzymes and then the compound undergoes a reaction to produce the product.

(V) Treatment of Polluted Soil

There have already been many reports on the study of using trichloroacetic acid as a weeder in the search for the course of further dissipation of trichloroacetic acid in soils. The major processes are microbiological degradation and leaching. According to the physio-chemical properties and the biological degradation characteristics of chloral and trichloroacetic acid, measures that increase the activity of microorganisms in the soil (such as applying additional organic fertilizers and appropriately increasing the moisture content), irrigation and leaching and turning and plowing the soil for drying are all beneficial to revitalizing the soil. The results of experimental treatments in the laboratory are shown. The smaller the residual ratio the more effective the measure is indicated.

The results of the experiment show that the effects of the above measures upon hastening the degradation of chloral and trichloroacetic acid in the soil are very visible. According to the actual conditions of the polluted areas, a certain measure or many measures can be appropriately taken to hasten revitalization of the soil and reduce agricultural losses.

FOOTNOTES

1. Wheat damage research group of Nankai University, 1975: Investigation of the Cause of Damage to Wheat in the Hangu Area in 1974.

2. Agricultural Environment Protection Laboratory of the Academy of Agricultural Sciences of Nanjing City, 1975: Preliminary Report on the Experimental Study of the Problem of Damage to Wheat by the Irrigation of Polluted Water From the Liangshui River.

3. Farmland Irrigation Institute of the Chinese Academy of Agricultural Sciences, 1976: Experimental Results of the Damage to Wheat Caused by Chloral.

4. Xu Ruiwei [1776 3843 5633], Yang Xueyi [2799 1331 5030], Son Hangzhong [1327 3352 0022], et al, 1979: Serious Attention Must Be Paid to the Incident of Damage to Wheat Caused by Chloral, Investigative Report of the Incident of Damage to Wheat in Taixian, Jiangsu.

5. Farmland Irrigation Institute of the Chinese Academy of Agricultural Sciences, 1975: The Problem Concerning the Standard of the Quality of Irrigation Water Containing Chloral and Formaldehyde.

6. Qian Wenheng [6929 2429 1854], Xu Ruiwei [1776 3843 5633] et al, 1979: Head Space Chromatographic Analysis of Trichloroacetic Acid in the Soil.

7. Measured with the help of the mass spectroscopy group of the Chemical Institute of the Chinese Academy of Sciences, thanks.

8. Sun Hanzhong [1327 3352 0022], Zhao Jiahua [6392 1367 7520], Xu Ruiwei [1776 3843 5623], 1977: The Effect of Water and Chloraldehyde Upon Paddy Rice and Its Aftercrop of Wheat. (Work Report)

9. Xu Ruiwei [1776 3843 5623], Li Deping [2621 1795 1627] et al, 1979: Effect of Chloral and Its Product of Degradation in the Soil Upon the Growth of Wheat (Work Report).

9296
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BRIEFS

AGRICULTURAL, SIDELINE PRODUCTS--This year, the number of deals concluded at the agricultural and sideline products markets in cities throughout China is more than double last year's 1.2 billion yuan. [OW301243 Beijing Domestic Service in Mandarin 1200 GMT 24 Dec 80 OW]

METEOROLOGICAL DEPARTMENTS' RESTRUCTURING--Nanning, 26 Dec (XINHUA)--China's meteorological departments have scored initial achievements in restructuring and reforming their management system. Meteorological departments in 22 provinces and autonomous regions are now led by professional personnel instead of local government personnel. Since the beginning of this year, meteorological departments in 25 provinces, municipalities and autonomous regions have sponsored a total of 120 training classes, which were attended by some 4,700 professional personnel and leading cadres. [Beijing Xinhua Domestic Service in Chinese 0342 GMT 26 Dec 80 OW]

ARTIFICIAL INSEMINATION OF CATTLE--Beijing, 14 Dec (XINHUA)--China is popularizing the artificial insemination of cattle using frozen semen. In 1980, more than 1 million cows were artificially inseminated. In the first 8 months of 1980, China produced some 4 million doses of frozen cattle semen. Since 1978, 29 frozen semen stations and more than 6,000 grassroots insemination stations have been set up in China. [Beijing Xinhua Domestic Service in Chinese 0313 GMT 14 Dec 80 OW]

EARTHWORM CULTIVATION MEETING--A national meeting for exchanging experience in the artificial cultivation of earthworms was held in Shanghai on 16 December. Jointly sponsored by the Agriculture Ministry, the Ministry of State Farms and Land Reclamation and the Food Ministry, the meeting was attended by more than 90 representatives from 18 provinces, municipalities and autonomous regions. China started the artificial cultivation of earthworms in 1978. At present, more than 200 grassroots units are carrying out experimental cultivations. The current meeting lays stress on scientific research and economic results and will formulate next year's plans for the artificial cultivation of earthworms. [Shanghai City Service in Mandarin 1130 GMT 16 Dec 80 OW]

GROUND WATER RESOURCES--Beijing, 12 Dec (XINHUA)--China has verified its ground water and geothermal resources in 13 provinces and autonomous regions, covering an area of 1.99 million square kilometers. In Tengger, Badain Jaran and Ulan Buh deserts, 15 basins totaling 13,600 square kilometers have been found to contain spring water. In northwestern Sichuan grassland, ground water resources with

annual flow of 5.2 billion cubic meters has been found. In the southwestern mountainous areas, 2,058 underground rivers, whose total length is twice the Changjiang River, have been found. Annual water flow is estimated at more than 200 billion cubic meters. Hydrogeological workers have also found more than 1,000 geothermal spots and more than a hundred geothermal belts through surveys. In Yunnan's Tengchong geothermal zone, a high-temperature geothermal belt, 450 kilometers long and 330 kilometers wide, has been located. Water temperature here exceeds 80 degrees fahrenheit. A meeting was held by the hydrogeological corps headquarters in Beijing 4-10 December to commend more than 200 advanced hydrogeological fighters. [Beijing Xinhua Domestic Service in Chinese 1256 GMT 12 Dec 80 OW]

CSO: 4007

BRIEFS

FORESTRY POLICY--Huang Yu, vice governor of Anhui Province, spoke at the province-wide conference on 8 December. He called for implementing the State Council's circular on prohibiting wanton logging of forests. He pointed out that wanton logging still exists in Anhui Province and called for effective measures to protect lumber resources. He urged that efforts be made to propagate and study the State Council's relevant circular; to strictly implement the state's monopoly in the purchase and sale of lumber and bamboo; to immediately suspend logging not included in the state plan; to close the free market for lumber and bamboo south of the Huaihe River; to safeguard the state's, the collective's and the individual's ownership right to bamboo and lumber; and to deal a serious blow at the criminal act of damaging afforested areas. [OW180401 Hefei Anhui Provincial Service in Mandarin 1100 GMT 9 Dec 80 OW]

CSO: 4007

BRIEFS

MINORITY ECONOMY, CULTURE--In Gansu Province, the Jiuquan Prefectural CCP Committee and administrative office have helped Subei Monggol Autonomous County and Aksay Kazakh Autonomous County implement the policy on nationalities and accelerate economic and cultural undertakings, so as to enable the people to become prosperous at an early date. The Prefectural CCP Committee and administrative office have decided that, beginning in 1981, newly built commune- and brigade-run enterprises in these counties will be exempted from income taxes for 5 years, the counties themselves may use profits of state enterprises, food grain for herdsmen will be increased, stipends for minority students will be increased, and each person at livestock breeding communes will receive 2 yuan of medical subsidy every year. [SK100342 Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 5 Dec 80 SK]

SHEEP BREEDING--Lanzhou, 8 Dec (XINHUA)--Chinese scientists have bred by hybridization a new fine wool sheep on a snow-covered mountain grassland in northwest China's Gansu Province in altitudes between 2,600 and 4,000 meters. According to Zhang Songyin, professor of the Gansu Agricultural Institute, the new variety adapts to adverse ecological conditions in high and cold areas. Last summer's measurements of about one thousand adult sheep showed that a ram yielded 7.5 kilograms of wool and a ewe 4.3 kilograms. The wool was over seven centimeters long and could be used to spin yarns of more than 64 counts. The sheep was hybridized with a Xinjiang fine-wool sheep as male parent and local Tibetan and Mongolian sheep as female parents. In Gansu Province there are about 13.3 million hectares of grassland, mostly at an altitude above 2,000 meters. Its local bred sheep used to yield only one kilogram of wool which cannot be used for worsted spinning. Breeding of a new fine wool sheep in high altitudes started as early as 1957. China's other fine wool sheep are all bred in grasslands of low altitudes. [Text] [OW091036 Beijing XINHUA in English 1232 GMT 8 Dec 80 OW]

CSO: 4007

BRIEFS

OVERWINTERING CROPS--According to statistics, by the end of November, Guangdong Provincial had sown overwintering crops on some 7.6 million mu. While less wheat and green manure had been sown than in the corresponding period of last year, more broad beans, rape, winter tobacco, vegetables and autumn sugarcane had been cultivated. The majority of the prefectures have tended overwintering crops well. Shantou Prefecture had sown winter wheat on 600,000 mu by 22 November. Foshan Prefecture has tended well cash crops, including potatoes, vegetables, tobacco and onions, on 250,000 mu. Xinhui and Dongguan counties have done well in vigorously cultivating U.S. azolla to supplement green manure which was not sufficiently sown in winter. At present, Xinhui County has cultivated azolla on some 480 mu, and 90 percent of its communes have cultivated azolla. The county plans to cultivate azolla on 200,000 mu next spring. [Guangzhou Guangdong Provincial Service in Mandarin 1120 GMT 11 Dec 80 HK]

HAINAN ISLAND RUBBER PRODUCTION--Hainan Island has been initially built into a natural rubber production base. Since 1951, the island has developed tropical crops, chiefly rubber. The whole island has now set up 97 state farms, including overseas Chinese state farms, with approximately 300,000 staff and workers. These farms have cultivated rubber on some 2.7 million mu. Rubber trees on some 1.2 million mu have now been tapped. The island provides 70,000 metric tons of dry rubber to the state every year and has become the country's main base for natural rubber production. All state farms have also actively developed all kinds of cash crops, such as fruits, and other agricultural produce, animal husbandry and sideline production. State farms and communes throughout the island have set up 651 rubber processing plants, which produce approximately 500 metric tons of dry rubber items per day. Communes and brigades throughout the island will cultivate rubber on some 600,000 mu next year and will produce 5,000 metric tons of dry rubber per year. [HK200800 Guangzhou Guangdong Provincial Service in Mandarin 2345 GMT 8 Dec 80 HK]

CSO: 4007

BRIEFS

LATE RICE PRODUCTION--By the end of November, the Guangxi region had harvested some 18 million mu of late rice, basically fulfilling the year's harvest plan. From 10 to 20 November, the province was busy harvesting autumn crops. The whole region harvested an average of 840,000 mu of late rice everyday, showing an increase of 140,000 mu per day over the same period last year. [Nanning Guangxi Regional Service in Mandarin 1130 GMT 4 Dec 80 HK]

EMERGENCY MEETING--The Guangxi Regional People's Government held an emergency meeting on the morning of 6 December on implementing the State Council's circular on forbidding indiscriminate lumbering. The meeting decided: People's governments at all levels must seriously implement the State Council's urgent circular on forbidding indiscriminate lumbering, and the following measures must be implemented: 1) all lumbering tasks should be stopped from now on since the region has already fulfilled this year's lumbering task; 2) strengthen management of unified sale and purchase of timber; 3) close free timber markets in the forest areas; 4) strictly forbid indiscriminate lumbering; and 5) commune and brigade timber processing factories must carry out rectification and should be run under the supervision of the forestry department. [Nanning Guangxi Regional Service in Mandarin 1130 GMT 7 Dec 80 HK]

PHONE CONFERENCE--Guangxi Regional People's Government held a telephone conference on 8 December, urging all places to prohibit indiscriminate lumbering, protect forest resources and develop forestry. The conference was presided over by Ren Gengqing, regional people's government vice chairman, and Gan Ku, vice chairman, and conveyed the State Council's urgent circular on resolutely prohibiting indiscriminate lumbering. Vice Chairman Zhou Guangchun, spoke at the conference. The conference demanded that leaders at all levels strengthen leadership over the prohibition of indiscriminate lumbering. [Nanning Guangxi Regional Service in Mandarin 1130 GMT 9 Dec 80 HK]

CSO: 4007

BRIEFS

COTTON PRODUCTION--According to a HEBEI RIBAO report, Hebei Province has reaped a bumper cotton harvest. As of 20 November, the whole province had procured 410 million jin of cotton, and total production was estimated to amount to 370 million jin. Average cotton yield per mu amounted to 58 jin which set a new record. All leaders of party and government organs of the province have seriously implemented the spirit of the national conference on cotton production to increase cotton production and enrich the cotton farmers. Since the beginning of this year, 100,000 cotton plantation teams out of 124,000 teams have practiced various cotton production responsibility systems which encourage cotton production. [Shijiazhuang Hebei Provincial Service in Mandarin 0430 GMT 26 Nov 80 HK]

CSO: 4007

FORESTRY PROTECTION CONFERENCE HELD

SK200945 Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 19 Dec 80 SK

[Excerpts] The Provincial People's Government held a telephone conference on the night of 19 December on implementing the State Council circular on forbidding arbitrary tree felling.

The conference pointed out: Over the past 30 years our province has made great achievements in developing forests and contributed much to the nation's socialist construction. However, many problems remain with regard to forestry protection. Some problems are very serious and cry for immediate solution. On average, our province overcuts some 2 million cubic meters of trees above annual tree-felling plans. The number of trees cut annually has greatly exceeded new plantings, thus causing great harm to forest reserves. Denudation has been very serious. Some 9.8 million mu of natural forests in the province's 52 forestry areas under the jurisdiction of municipalities and counties have been damaged over the past 10 years or so. The management, marketing and transportation of timber are in a mess in our province. All the province's forestry, supply, and No. 2 light industrial departments, commune and brigade-run enterprises, cooperative offices and state-owned farms and forests have a hand in this business. Some forestry bureaus and forest administrations market timber by themselves. A great number of communes and brigades and other units in forestry areas have established lumber mills and process locally purchased timber in pursuit of extraordinary profits. Cases of denudation and of beating forestry guards have occurred one after another, many of which remain unsolved.

The conference urged all localities to, first of all, raise the level of understanding of leading bodies at all levels and make them recognize the significance of protecting and developing forestry resources. We must stop cutting more trees than prescribed by the plans. The various forestry bureaus and forest administrations must strictly abide by the timber production plans devised by provincial authorities. Nonforestry departments must stop cutting trees and withdraw from forest areas. Farms are not allowed to cut trees in forests under their jurisdiction without authorization.

CSO: 4007

CONFERENCE URGES PREPARATIONS FOR PLOWING, SOWING

SK280700 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 27 Dec 80

[Excerpts] According to our sources, the Provincial Party Committee and the Provincial People's Government held a telephone conference on the evening of 26 December, urging all localities to quickly complete grain threshing and delivering and shift the emphasis of rural work to preparing for plowing and sowing to ensure a better harvest next year.

The following five tasks were set forth at the conference in view of the insufficient material supplies, next spring's drought and waterlogging threats and the prevailing dilatory workstyle:

First, quickly complete grain threshing and delivering to secure as much time as possible to prepare for spring plowing and sowing. The province has completed 90 percent of threshing and has overfulfilled this year's grain procurement plan. However, the progress is uneven. Twenty-one municipalities and counties have not completed threshing. Some have completed only half their work. This will inevitably affect preparations for plowing and sowing. The Provincial Party Committee and the People's Government urged concerned prefectures and counties to strengthen the leadership over those counties and communes where threshing has not been completed and adopt effective measures to help them promote their work. At the same time, they should transfer personnel to prepare for plowing and sowing.

Second, do a good job in farmland capital construction. Next year, the province will have waterlogging in the eastern areas, drought in the western areas and both in the central areas.

Third, mobilize the masses to support preparing for plowing and sowing with sufficient material supplies. Our current problem is a farmyard manure shortage. From now on, much greater manpower in rural areas should be transferred to collecting and producing farmyard manure. Professional teams should work together with peasants to collect and produce as much fertilizer as possible. Where conditions permit localities should produce grass charcoal. About 80 percent of the manure needed next year must be collected and produced before the spring festival. The remaining 20 percent should be prepared before spring plowing. Party committees and governments at all levels should pay special attention to selecting, storing and preserving seeds. [Words indistinct]. Conscientious efforts should be made to have farm machinery overhauled this winter. Preparations for animals to tide over winter should be undertaken.

Fourth, do a good job in winter sideline production to accumulate funds for next year's agricultural production. Sideline occupations are an important way to solve funding problems through self-reliance. Leaders at all levels must include sideline production in their work agenda and ensure it is successfully enacted.

Fifth, strengthen leadership over the work of preparing for plowing and sowing.

CSO: 4007

BRIEFS

GRAIN PROCUREMENT--The Heilongjiang Provincial People's Government has decided to lower grain procurement quotas for paddy rice growing brigades who failed in the past 3 years to overfulfill their grain procurement plan by 40 percent. As of today, 461 poor paddy rice growing brigades have been allowed to reduce grain procurement quotas. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 8 Dec 80 SK] According to the statistics compiled by the Heilongjiang Provincial Grain Procurement Office, on 9 December Heihe Prefecture and 11 other municipalities and counties have fulfilled their grain procurement task. Hailun County had sold an extra 40 million jin to the state by 7 December. Qingan County had overfulfilled its soybean procurement plan by 12.7 percent and paddy rice by 27.2 percent on 7 December. [Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 9 Dec 80 SK]

COUNTY GRAIN--By 4 December, Hailun County, a key grain growing county in Heilongjiang Province, had overfulfilled its grain procurement task for 1980. On an average, the county sold 2,600 jin of grain to the state per day. The county is now vigorously selling its surplus grain to the state. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 6 Dec 80 SK]

INCREASED GRAIN PRODUCTION--In Heilongjiang, Yian County, which had suffered a production decline over the past 5 years, increased their grain and soybean production this year. Per mu grain yield increased to 180 jin this year, while in the past few years it was about 100 jin. The county is expected to sell to the state 50 million jin of marketable grain this year. [Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 14 Dec 80 SK]

GRAIN PROCUREMENT--Songhuajiang Prefecture, Heilongjiang Province, has overfulfilled the 1980 state grain procurement plan by 380 million jin. The prefecture is now selling 40 million jin of surplus grain to the state each day. As of 18 December, the prefecture marketed 1.54 billion jin of grain and soybeans to the state. [SK212245 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 20 Dec 80 SK]

DROUGHT AFFECTS FARMLAND--Over the past few years, drought has become more and more serious in Suihua Prefecture, Heilongjiang Province. Some 3,126 production teams in Anda, Zhaodong, Zhaoyuan, Zhaozhou, Lanxi, Qinggang, Mingshui, and Wangkui counties and some 4.39 million mu of farmland have been affected. These production teams are vigorously building irrigation projects to strengthen the drought combating capacity. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 22 Dec 80 SK]

SNOW-COVERED CROPS--Harbin, 12 Nov (XINHUA)--Cadres, peasants and state farm workers in Heilongjiang Province have recovered some 7 million mu of the more than 8 million mu of autumn-ripening crops buried under the snow that fell 24-27 October. Hejiang and Mudanjiang prefectures as well as several dozen state farms which were seriously hit by the snow daily engaged more than 4 million people and 160,000 mechanized and animal-drawn vehicles to rush-harvest and transport the buried crops. [OW161823 Beijing Xinhua Domestic Service in Chinese 1417 GMT 12 Nov 80 OW]

WASTELAND RECLAMATION--Harbin, 15 Nov (XINHUA)--Large numbers of new villages have appeared on the wasteland in Heilongjiang's Hejiang and Heihe prefectures. They are reclamation centers built by the nearby communes with farm machinery bought with state loans. Sixty-nine such centers have been built this year, in addition to the 86 already built last year. Over the past 2 years, these reclamation centers have reclaimed 2.93 mu of wasteland. [Beijing Xinhua Domestic Service in Chinese 0120 GMT 15 Nov 80 OW]

FARM OUTPUT--Owing to the serious droughts this year, Heilongjiang Province's total output of grain, soybeans and potatoes decreased by 1.2 billion jin from the 1979 level. However, the province's state-owned farms made rapid progress in production. Their output totaled 6.4 billion jin, an increase of 860 million jin over their 1979 level. Grain output by state-owned farms accounts for 22.8 percent of the province's 1980 total grain output. State-owned farms account for 36.4 percent of the province's marketable grain. [Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 18 Dec 80 SK]

CSO: 4007

BRIEFS

FORESTRY CONFERENCE--From 10 to 13 December, the Henan Provincial People's Government held an urgent conference on forestry work. The conference called on the province to seriously implement the State Council's urgent circular by taking effective measures, to mobilize all people to resolutely prohibit indiscriminate logging and to actively carry out the afforestation activities this winter and next spring. Dai Suli, Provincial CCP Committee secretary and vice provincial governor, spoke at the conference. [Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 14 Dec 80 HK]

CSO: 4007

BRIEFS

COMFORT VISITS--Led by Xie Wei, vice chairman of the Hubei Provincial CPPCC Committee, the production and relief inspection group of the Provincial CPPCC Committee went deep into the affected areas in Xiaogan and Hanchuan counties to pay comfort visits to victims. The group comprised 14 NPC delegates, national CPPCC Committee members and standing committee members and members of the Provincial CPPCC Committee. Some of them are experts in and professors of culture, education, science, technology, medicine and public health. Proper arrangements have been basically made for the livelihood of the people in the affected areas and farmland and water conservancy projects are being repaired. Production has been restored relatively quickly. Autumn sowing has been completed and overwintering crops, such as wheat and rape, are growing well. The inspection group returned to Wuhan on the afternoon of 9 December. [HK200724 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 10 Dec 80 HK]

MEETING ON RELIEF--The Hubei Provincial CCP Committee held a standing committee meeting on 8 December and decided to set up a Provincial CCP Committee production and relief leadership group. The production and relief leadership group will consist of provincial responsible comrades headed by Huang Zhizhen, secretary of the Provincial CCP Committee and vice governor, and (Ren Zhonglin), deputy secretary of the Provincial CCP Committee. The meeting also demanded that all disaster-stricken areas set up similar groups to rapidly speed up production, provide people with disaster relief and reduce the people's anxieties. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 9 Dec 80 HK]

RELIEF EFFORTS--Hubei Province has done well in providing disaster-stricken areas with relief and has ensured people's grain ration supply. At present, some 112,000 houses in disaster-stricken areas have been repaired, which accounts for 56.9 percent of the collapsed houses. All areas have already given 250,000 yjan and some other necessities to solve the people's urgent problems. The province has arranged for 770,000 laborers in the disaster-stricken areas to speed up industrial and sideline production. Medical departments at all levels have sent some 280 medical teams to these areas to control the spreading of diseases. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 9 Dec 80 HK]

TELEPHONE CONFERENCE--The Hubei Provincial People's Government held a telephone conference on 2 December urging the cultivation of overwintering crops, Vice Provincial Governor Huang Zhizhen spoke at the conference, saying that there were still some shortcomings in cultivating overwintering crops, though the overall

situation was satisfactory. He demanded that all areas do the following three tasks well: 1) strengthen and perfect the production responsibility systems and further motivate the peasants' activism; 2) popularize scientific methods of cultivating overwintering crops and raise the level of scientific cultuvation and 3) solve fertilizer and capital problems well. Concluding, Huang Zhizhen demanded that leaders at all levels strengthen their leadership over cultivating overwintering crops and solve all relevant problems. [HK121458 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 3 Dec 80 HK]

FORESTRY MEETING--The Hubei Provincial emergency meeting for directors of all local forestry bureaus throughout the province was recently held. Wang Zhizhen attended the meeting and spoke. He said: The State Council's circular on forbidding indiscriminate lumbering is appropriate for our province. We must now promote ideological education for the people and popularize this circular. The Provincial People's Government must immediately issue an emergency circular on forbidding indiscriminate lumbering. Departments concerned should also carry out inspections check excessive lumbering. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 11 Dec 80 HK]

RAT EXTERMINATION--The Hebei Provincial People's Government recently issued a circular demanding that all places launch the masses to do a good job in rat extermination. The circular points out: The rodent population has risen everywhere in the province in recent years. Many places are seriously infested by rats, which destroy growing crops, steal grain, damage clothing, pollute food and even bite infants. The circular puts forward the following demands in order to control and exterminate rats as rapidly as possible, support production and construction and protect people's health: 1. Leaders at all levels must fully understand the importance of rat extermination work and strengthen leadership over it. 2. Adopt various methods to exterminate rats in light of local conditions. In connection with the patriotic public health movement, it is necessary to look after granaries and foodstuffs well, do a good job in sanitation work inside and outside the towns, block ratholes, cut the rats off from their sources of food and water and destroy the environment and conditions for their existence. It is necessary to pay attention to using the natural enemies of rats to exterminate them. We should promote the breeding of cats and protect owls and other wild creatures whose main diet is rodents. 3. Seize favorable opportunities for launching shock attacks to exterminate rats. 4. Departments concerned must closely cooperate in this work. [Excerpts] [HK130544 Shijiazhuang Hebei Provincial Service in Mandarin 0430 GMT 3 Dec 80]

CSO: 4007

BRIEFS

AGRICULTURAL PRODUCTION FORUM--At the forum which was held by the Hunan Provincial Agricultural Committee, professors and experts of the Provincial Agricultural Science Institute, Provincial Agricultural College, Provincial Normal College, Provincial Agricultural Department and Provincial Meteorological Bureau recently put forward their valuable opinions on how to promote agricultural production next year and on what measures should be taken scientifically and technologically. They held that over the past 30 years, the province has scored many achievements in agricultural technology. However, due to the 10-year period of turmoil, some leaders have not attached sufficient importance to the promotion of agricultural production and many effective measures have not yet been popularized. To promote agriculture next year, the key lies in leaders at all levels. These leaders should enhance their understanding of scientific knowledge. It is necessary to continue to establish a system popularizing agricultural technology, to organize and train the force of agricultural technicians and to popularize agricultural scientific knowledge. Only by firmly grasping these weak links can we promote agricultural production. [Changsha Hunan Provincial Service in Mandarin 2315 GMT 11 Dec 80 HK]

CSO: 4007

BRIEFS

COMMUNE CADRES--Approved by the departments concerned under the State Council and the Jiangsu Provincial People's Government, 7 prefectures and Nanjing Municipality in late November selected some 500 cadres through examination in efforts to strengthen the operation and management of rural communes. [Nanjing Jiangsu Provincial Service in Mandarin 2300 GMT 15 Dec 80 OW]

VEGETABLE SUPPLY MEETING--The Jiangsu Provincial People's Government recently held the second urban vegetable supply meeting and issued a circular on 10 December urging all municipalities to take resolutely measures to solve the problem of vegetable supply. The circular calls for building high- and stable-yield bases to increase the production of vegetables and stresses the necessity to reform wage and management systems. All municipal governments should strengthen the leadership over vegetable supply. [OW180519 Nanjing Jiangsu Provincial Service in Mandarin 2300 GMT 14 Nov 80 OW]

CSO: 4007

BRIEFS

FISH BREEDING--The Jiangxi Provincial People's Government has readjusted fishery policy and aroused peasants' enthusiasm in fish breeding. This year, the province's fish farm acreage has increased by more than 200,000 mu and some 320 million fish fries have been cultivated. From January to October, the province produced more than 49,000 dun of fish, topping the same period last year by more than 11,000 dun. [Beijing Domestic Service in Mandarin 0400 GMT 16 Dec 80 OW]

TONG OIL PROCUREMENT--From January to October this year, Jiangxi Province procured some 1.3 million jin of tong oil, 27.6 percent more than in the corresponding period of last year. Output of tong oil last year was some 6 million jin but the quantity procured by the state was decreasing. The province procured only 2.29 million jin of tong oil last year, fulfilling slightly more than half of the quota for procurement. The quantity of tong oil procured by the province and supplied by other provinces was less than one-fourth of the quantity needed by the province. The fact that supply fell short of demand adversely affected production in all trades and the people's livelihood. [HK110750 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 27 Nov 80 HK]

CSO: 4007

BRIEFS

JILIN HOGS--Jilin Province has 6.24 million head of hogs now, 6.7 percent more than in early 1980. Hogs raised by individuals are 5.41 million head. By the end of November, the province had procured 1,444,000 head of hogs. [Changchun Jilin Provincial Service in Mandarin 1100 GMT 14 Dec 80 SK]

MINOR FALL HARVESTS--Changchun, 5 Dec (XINHUA)--As of the end of October, Jilin Province had procured "minor fall harvest" products of a total worth of 73 million yuan, thus overfulfilling this year's procurement plan by 12.5 percent. The products procured include acorns, wild grapes, honey, membranous milk vetch roots, wild mushrooms, edible fungus, almonds and magnoliavine fruits. [OW091044 Beijing Xinhua Domestic Service in Chinese 0114 GMT 5 Dec 80 OW]

CAVE COLD STORE--Beijing, 4 Dec (XINHUA)--Engineers have carved a large cavern in a mountainside in the Changchun area of Northeast China's Jilin Province to make a cold store which can hold 15,000 tons of meat. The ice box holds 300 tons of ice. Provincial authorities said that the store will ease the difficulties in ensuring regular supplies of meat to the industrial areas of the province and the more remote mining and forest communities. In Sichuan, Southwest China, which is the country's leading pig-raising province, two new 9,000-ton cold stores have just gone into operation in the cities of Chongqing and Chengdu. China planned to increase its nationwide cold storage capacity by 150,000 tons by the end of this year. [OW050649 Beijing XINHUA in English 0723 GMT 4 Dec 80 OW]

AGRICULTURAL PRODUCTION--Dehui County, Jilin Province, reaped a bumper harvest in agricultural production this year. Output of grain and soybeans is 1.6 billion jin, up 20 million jin over last year. Its per capita income is 130 yuan. In addition, some 1.64 million mu of farmlands were tractor-plowed this year. [Changchun Jilin Provincial Service in Mandarin 1100 GMT 20 Dec 80 SK]

GRAIN CONFERENCE--The Jilin Provincial Government held a telephone conference on 5 December to urge the people to thresh and deliver grain vigorously. Despite natural adversities, Jilin Province still enjoys favorable conditions for fulfilling or overfulfilling its grain procurement task for this year. It was noted at the conference that priority in electricity and oil supply should be given to grain threshing work, that the quality of grain should be improved and that market management should be strengthened during grain procurement period. [Changchun Jilin Provincial Service in Mandarin 1100 GMT 5 Dec 80 SK]

OIL-BEARING SEEDS--Jilin Province has a bumper harvest of oil-bearing seeds this year. By 5 December the province had procured 420 million jin of oil-bearing seeds, 119 million jin or 39.7 percent more than the state-assigned plan. A key oil-bearing crop growing area, Baicheng Prefecture, has procured 272 million jin of oil-bearing seeds, 170 percent more than in 1979. [Changchun Jilin Provincial Service in Mandarin 2200 GMT 9 Dec 80 SK]

AGRICULTURAL YIELDS--Despite natural adversities such as cold temperatures, windstorms, heavy rain, hailstorms and early frost, Siping prefecture, Jilin Province, set a new record in agricultural production. The total grain and soybean output is expected to exceed 4.56 billion jin, 6.5 and 44.3 percent higher, respectively than in 1979 and 1977. The average per mu yield of its 178,000 mu of beetfields is 2,700 jin, and the total output is 480 million jin, 240 million jin more than in 1979. The output of tussah silkworm cocoons is 1,000 dan more than in 1979. The per-unit yield and the quality of tobacco are also better than in 1979. [SK120854 Changchun Jilin Provincial Service in Mandarin 1100 GMT 4 Dec 80 SK]

FARMLAND CONSERVATION PROJECTS--Jilin Province has recently convened a conference of water conservation bureau directors. The conference pointed out that it is essential to shorten the construction period of farmland conservation work in order to make better returns on the investment. Mismanagement, low quality and waste exist in our province's water conservation construction. From 1979, our province's water conservation departments have implemented the policy of readjustment and slashed the investment on farmland conservation projects. The province's 1980 investment on farmland conservation projects decreased by 18.7 percent from that of 1978 and by 21.5 percent from that of 1979. [Changchun Jilin Provincial Service in Mandarin 1100 GMT 23 Dec 80 SK]

CSO: 4007

BRIEFS

CATTLE EXPORTS--Liaoning Province exported some 10,000 cows to Hong Kong and Macao in 1980, a record for provincial cow exports. [SK182130 Shenyang Liaoning Provincial Service in Mandrain 1100 GMT 17 Dec 80 SK]

MUNICIPAL GRAIN--By 14 December, Shenyang Municipality, Liaoning, had overfulfilled its annual grain procurement plan by 19.58 million jin and had put 1,191,580,000 jin of grain in storage, an increase of 148.25 million jin over 1979. [Shenyang Liaoning Provincial Service in Mandarin 2200 GMT 15 Dec 80 SK]

SALT PRODUCTION--Liaoning prefulfilled its annual sea salt production plan by the end of November, an increase of 150,000 tons, or 47 percent, over the figure for the corresponding 1979 period. [SK120854 Shenyang Liaoning Provincial Service in Mandarin 2200 GMT 6 Dec 80 SK]

GRAIN OUTPUT--Seventeen key grain-producing counties in the middle part of Liaoning Province had good harvests despite natural disasters. According to preliminary estimates, their total output of grain and soybeans is expected to be 11.67 billion jin, an increase of 2 percent over that of 1979, which was also a bumper harvest year. The total output of grain and soybeans of Haicheng County, which registered a marked increase, was up by 100 million jin over the 1979 level. Changtu County's total output increased by 8 percent over 1979 and offered 800 million jin of marketable grain to the state. [OW090714 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 2 Dec 80 SK]

CSO: 4007

BRIEFS

QINGHAI FIRES--According to statistics compiled by the public security and fire control departments, 218 fires broke out in Qinghai Province during the January-November period, claiming 11 lives, injuring 35 persons, destroying 370,000 jin of grain and 20,000 mu of grasslands and resulting in 808,000 yuan in economic losses. In November alone, Qinghai Province had 48 fires. Four persons died, and eight were injured. [SK182124 Xining Qinghai Provincial Service in Mandarin 1030 GMT 17 Dec 80 SK]

TREE FELLING--According to Qinghai Provincial Forestry Bureau, (Xifusha) forest zone in Tongren County has been seriously damaged. Dozens of people come to cut trees every day and this 300-mu forest zone has become an area almost without trees. Another forest zone in the country, (Shuangpenxi) forest zone, has also been damaged seriously since autumn sowing. The Provincial Forestry Bureau urged the departments concerned of the Huangnan Tibetan Autonomous Prefecture and Tongren County to take measures to stop illegal felling of trees and to punish those involved. [Xining Qinghai Provincial Service in Mandarin 1030 GMT 12 Dec 80 SK]

GRAIN PROCUREMENT--The Qinghai Provincial People's Government issued a notice recently to commend Xining Municipality, Huangnan Tibetan Autonomous Prefecture and Haidong Prefecture for overfulfilling their grain procurement tasks. As of 30 November, Xining Municipality overfulfilled the annual grain procurement task by 4.23 percent, Huangnan Tibetan Autonomous Prefecture overfulfilled this task by 3.23 percent and Haidong Prefecture by 0.09 percent. Meanwhile, Huangnan Tibetan Autonomous Prefecture has basically fulfilled the annual oil-bearing crops procurement task. Hualong Hui Auto County overfulfilled the annual oil-bearing crops procurement task by 7.2 percent and Minhe County overfulfilled this task by 6.6 percent. [Xining Qinghai Provincial Service in Mandarin 2330 GMT 14 Dec 80 SK]

DROUGHT STATISTICS--Haidong Prefecture, Qinghai Province, has been afflicted with drought recently. According to statistics, some 80,000 people and 7,000 heads of livestock in Minhe and Ledu counties have difficulties in obtaining drinking water. The Provincial Civil Administrative Office, the Provincial Financial Office and the Haidong Administrative Office allocated some 150,000 yuan to drought-stricken areas to help relieve the shortage of water. [Xining Qinghai Provincial Service in Mandarin 1030 GMT 13 Dec 80 SK]

CSO: 4007

BRIEFS

GRAIN, COTTON--Pingdu County, Shandong Province, set records in grain, cotton and peanut production this year. It reaped 1,157,000,000 jin of grain, 20 million jin more than the 1979 figure, and sold 220 million jin to the state, 110 million jin more than the state-assigned quota. The county harvested 38 million jin of cotton, 16 million jin more than the 1979 figure, and sold 37 million jin to the state, 17 million jin more than the state-assigned quota. It harvested 88 million jin of peanuts and sold 36 million jin to the state, doubling the state-assigned quota. [Jinan Shandong Provincial Service in Mandarin 2300 GMT 21 Dec 80 SK]

COTTON HARVEST--Linqing County, Shandong Province, reaped a total of 500,000 dan of cotton this year, as compared with 223,000 dan in 1979, from its 387,000 mu of cotton fields. By 22 November, 482,671 dan of ginned cotton was procured. [SK100418 Jinan Shandong Provincial Service in Mandarin 2300 GMT 5 Dec 80 SK]

GRAIN CIRCULAR--The Shandong Provincial Industry and Commerce Bureau, Grain Office, Supply and Marketing Cooperative, Communications Office and Jinan Railway Bureau recently issued a joint circular calling for efforts to strengthen management of grain and oil-bearing seed markets and stop outflow of grain and oil-bearing seeds. The circular states that purchases and sales of grain, fat and oil-bearing seeds at negotiated prices are to be handled by grain departments. No other departments are allowed to do such business. The circular states that no enterprises or organizations are allowed to buy grain and oil-bearing seeds from rural areas, no production teams are allowed to sell their grain and oil-bearing seeds at negotiated prices before they fulfill their procurement quotas, and no railway and transportation departments are allowed to transport grain and oil-bearing seeds to other provinces without the permission of the Provincial Grain Office. [SK160635 Jinan Shandong Provincial Service in Mandarin 2300 GMT 14 Dec 80 SK]

GRAIN OUTPUT--Shouguang County, Shandong Province, sold over 135 million jin of grain to the state in 1980, 58.6 million jin more than called for in the state plan. [SK250846 Jinan Shandong Provincial Service in Mandarin 2300 GMT 24 Dec 80]

COTTON PRODUCTION--Some 2.7 million mu cotton fields in Liaocheng Prefecture, Shandong Province, have yielded 3 million dan of cotton this year, a 200 percent increase over 1979. On an average, each cotton farmer has handed over 79 jin of commodity cotton to the state and per-capita distribution has increased from 54.8 yuan in 1979 to over 110 yuan. Total earnings from cotton of the prefecture exceed 670 million yuan which is nearly 240 percent of the total earnings from agriculture in 1979. [SK141235 Jinan Shandong Provincial Service in Mandarin 2300 GMT 9 Dec 80]

ANIMAL HUSBANDRY--By the end of September 1980, Shandong Province had 3,463,000 head of draught animals, 0.6 percent more than the figure calculated by the end of 1979. In Heze Prefecture, the number of draught animals has increased to 419,800--32,900 head more than in 1979. [SK222214 Jinan Shandong Provincial Service in Mandarin 2300 GMT 20 Dec 80 SK]

GRAIN YIELD--Sishui County, Shandong Province, increased its per mu grain yield and per mu peanut yield by 59 jin and 49 jin, respectively, over the 1979 figures. Total income from agriculture is expected to be 52.25 million yuan this year, 21 percent higher than in 1979. [SK120900 Jinan Shandong Provincial Service in Mandarin 2300 GMT 7 Dec 80 SK]

CSO: 4007

BRIEFS

ANIMAL HUSBANDRY--According to statistics, by the end of September, Sichuan Province had raised 75.21 million head of various kinds of animals, 5 percent more than in the corresponding period of last year. Commune members' households had raised some 70,000 draft cattle. The province had procured 530,000 pieces of cattlehide, 3.25 million pieces of goatskin and 80,000 jin of rabbit hair. [Chengdu Sichuan Provincial Service in Mandarin 2300 GMT 27 Nov 80 HK]

TREE CUTTING--Chengdu, 22 Dec (XINHUA)--Sichuan Province ranks second in China's virgin forest reserves. However, due to indiscriminate tree cutting over a long period, the province's forest reserves have been seriously depleted. According to estimates of the Provincial Forestry Department, the province's annual tree cut total 30 million cubic meters while the annual tree growth only amount to 15 million cubic meters. If this trend is unchecked, the province's virgin forests will be completely wiped out in 20 years. To combat indiscriminate tree cutting, the province has organized some 2,800 forestry personnel of the public security organs, procuratorial organs and people's courts to inspect various localities. [OW220107 Beijing Xinhua Somestic Service in Chinese 1320 GMT 12 Dec 80 OW]

EDIBLE OIL--Due to growing increases in edible oil production, Sichuan Provincial departments concerned decided that grain rational coupons could be used in exchange for edible oil. The advantages of this measure are: 1) it will serve to promote the sale of edible oil in the municipalities; 2) it will ease the state's problem of edible oil storage; 3) the people's need for edible oil will be satisfied. The exchange method works as follows: A person presents his grain rational coupon at the grain counter and can receive 1 jin of edible oil in exchange for 6 jin of grain. [Chengdu Sichuan Provincial Service in Mandarin 2300 GMT 29 Nov 80 HK]

CSO: 4007

BRIEFS

MEAT PRICES REDUCED--Lhasa, 15 Dec (XINHUA)--Retail prices for beef, mutton, frozen pork from inland areas and local and canned pork in all parts of Xizang Autonomous Region have been reduced since 16 November. Compared with original retail prices, beef was reduced 9.6 percent, frozen pork from inland areas by 16.7 percent, and local pork was lowered to the 1979 price. [Beijing Xinhua Domestic Service in Chinese 0747 GMT 15 Dec 80 OW]

CSO: 4007

CHEMICALS USED TO INDUCE MALE STERILITY IN GENG RICE

Kunming YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 3, 25 Jan 80 pp 43-44

[Article by Xiong Jianhua [3574 1696 5478] and Fan Pinggui [5400 0756 6311] of the Yunnan Provincial Academy of Agricultural Sciences: "Brief Report on Chemically Induced Male Sterility in Geng Rice"]

[Text] At present, there are two ways to utilize heterosis to increase the unit area yield of paddy rice. One is selective breeding of the three lines to form hybrids, and the other is utilizing chemicals to induce male sterility in the female parent variety in specific and strongly superior combinations, causing the pollen to lose its fertility while not affecting the ability of the pistils to be fertilized normally. Then the treated female parent is coupled with the male parent variety to produce hybrids for production and application. Hybrid xian rice that has been chemically emasculated in Guangdong Province already covers an area of over 1 million mu, and a definite increase in yield has been realized. We began to conduct experiments and research in chemical emasculation of geng rice in 1978. The results are as follows:

1. Period of Spraying Chemicals

The emasculating agent No 1 (with an effective content of 97 percent of methyl arsenic acid zinc) prepared by the crop heterosis research and utilization coordination and cooperation group of Guangdong Province, and 3 concentrations of 150 ppm, 200 ppm and 250 ppm are used. Spraying was done during the period of meiosis of the pollen mother cell, filling period and the period of completion of maturation. At this time, the distance between leaf supports of the boot leaves is -4 to 11 centimeters. Each treatment covers 150 to 200 plants. Two varieties, the 77-136 and the 6 ke lao were used in the experiment. They were sprayed with 200 ppm of the chemical to induce male sterility. Except for the nearly 8 percent fruiting resulting from self-pollination after spraying the 6 ke lao during the period of completion of maturation of pollen, the percentage of sterility resulting from spraying during all other periods was all 100 percent, but both were affected by the chemical and closed glumes occurred, and the earlier the chemical was sprayed the higher the percentage of closed glumes. The different varieties reacted differently to the chemical. (see Table 1)

Table 1. The Effect of Chemically Induced Male Sterility by Spraying During Different Periods

200ppm

(1) 品种	(4) 喷药时期 叶枕距 cm	(7) 花粉发育时期	(11) 调查穗数	(12) 平均每穗 (13) 总粒数	(14) 空粒数	(15) 不育率%	(16) 闭颖数	(17) 闭颖率%	(18) 备注
(2) 77—136	-2～+2	(8) 花粉母细胞减数分裂期	30	202.5	202.5	100	120.3	59.41	(19) 有部份包颈现象
	4～9	(9) 花粉内容充实期	35	214.3	214.3	100	103.2	48.16	
	11以上 (6)	(10) 花粉完熟期	35	176.3	176.3	100	48.5	27.51	(20) 出现六分之一左右黑壳
(2) 云粳 21	-4～0	(8) 花粉母细胞减数分裂期	30	174.7	174.7	100	58.9	33.71	
	1～7	(9) 花粉内容充实期	30	189.2	189.2	100	21.4	11.31	
	10以上 (6)	(10) 花粉完熟期	32	160.8	160.8	98.29	18.6	11.37	
(3) 六科老	-2～+2	(8) 花粉母细胞减数分裂期	30	132.5	132.5	100	35.3	26.64	
	3～6	(9) 花粉内容充实期	30	128.4	128.4	100	17.1	13.32	(21) 有部份黑壳出现
	9以上	(10) 花粉完熟期	30	137.2	126.8	92.42	13.5	9.84	同 上 (22)

Key:

(1) Varieties
(2) Yun geng 21
(3) 6 ke lao
(4) Period of spraying chemicals
(5) Distance between leaf supports
(6) Over 11
(7) Pollen development period
(8) Period of meiosis of pollen mother cell
(9) Filling of pollen period
(10) Period of completion of maturation of pollen
(11) Surveyed number of panicles
(12) Average per panicle
(13) Total number of grains
(14) Number of empty grains
(15) Percentage of infertility percent
(16) Number of closed glumes
(17) Percentage of closed glumes percent
(18) Remark
(19) Partial wrapping of the neck occurred
(20) Occurrence of about one-sixth of black husks
(21) Some black husks occurred
(22) Same as above

2. Concentration of the Chemical Solution

Experimental results show that emasculation using below 150 ppm of the No 1 emasculating agent is not thorough. When the concentration is greater than 250 ppm, the percentage of sterility can reach 100 percent. Yet the percentage of closed glumes is 30 to 60 percent and sometimes it has reached as high as 85 percent. At the same time, wrapped necks have occurred and part of the spikelets have changed to brown. The most suitable concentration is 150 ppm to 200 ppm. The emasculation is complete and tne damage caused by the chemical is not serious. (see Table 2) Under an appropriate concentration, an even spraying is required and spraying should not miss some plants. Spraying must also not be overly done to achieve an ideal emasculation.

Table 2. Effect of Chemically Induced Male Sterility by Different Concentration

(1) 品种	(3)浓度 ppm	(4) 叶枕距 cm	(5) 调查穗数	(6) 平均每穗 (7) 总粒数	(8) 不实粒数	(9) 不育率%	(10) 闭颖数	(11) 闭颖率%	(12) 备注
(2)滇协一号	150	3—8	25	172.1	168.2	97.7	50.3	29.2	
	200	3—8	25	151.5	151.5	100	67.4	44.5	(13)
	250	3—8	25	143.9	143.9	100	85.5	59.42	个别穗闭颖较重
	150	1—6	25	186.2	180.1	96.72	50.6	27.1	
77—136	200	1—6	25	169.2	169.2	100	58.7	34.69	
	250	1—6	25	162.5	162.5	100	73.2	45.05	
	150	0—4	25	193.6	182.1	94.06	20.1	10.4	
888	200	0—4	25	238.2	238.2	100	36.4	15.28	(14)
	250	0—4	25	186.4	186.4	100	55.3	29.67	植株两对照明显降低20公分

Key:

(1) Varieties
(2) Dianxie No 1
(3) Concentration
(4) Distance between leaf supports
(5) Surveyed number of panicles
(6) Average per panicle
(7) Total number of grains
(8) Number of semi-filled grains
(9) Percentage of infertility (percent
(10) Number of closed glumes
(11) Percentage of closed glumes
(12) Remark
(13) Individual panicles suffered more seriously from closed glumes.
(14) The planted plants and the control visibly showed a drop of 20 centimeters.

3. Selective Combination of Strongly Superior Combinations for Chemical Emasculation

After screening over 70 combinations using chemically emasculated female parents, four combinations have been found to manifest the strongest heterosis. Manifestation of heterosis was very visible in the three aspects of effective panicles, weight of the full grains and weight of thousand grains which form the yield. Of the first generation seeds of 6 ke lao x jin ning 768, the 1.8 li small area yielded a net of 30 jin per thousand grains, equivalent to a per mu yield of 1,630 jin. The yield of the single plant showed an increase of 40.3 percent over the high value parent. The yield of the single plant of the 3 combinations of 77-136 x jin ning 768, yun geng 21 x jin ning 768, 888 x 77-136 showed increases of 37.28, 13.2 and 23.6 percent respectively over the high value parent. Of the four combinations, the plant height of 6 ke lao x jin 768 and 888 x 77-136 were medium and were considered to be ideal combinations.

4. Discussion of the Problem

According to preliminary practice in the use of chemicals to induce male sterility, the earlier the period of spraying the chemical the greater the inhibition upon the plants. When the chemical is sprayed too late, emasculation is not thorough. It seems that it is very important to choose the most appropriate time for emasculation. The concentration of the chemical and the effect of emasculation are closely related but the distance between the concentration for emasculation and the safe concentration is relatively narrow. In practice, an insufficient amount of chemicals will not emasculate thoroughly. An overly abundant amount will also cause abnormal flowering, thus in future practice, studies should be conducted in developing new emasculation chemicals. Selection of the parents should consider similar plant heights and growth periods of the parents. With combinations, consideration can be given to the utilization of the F_2 generation.

9296
CSO: 4007

BRIEFS

AGRICULTURAL HARVESTS--Kunming, 14 Dec (XINHUA)--Yunnan Province reaped good agricultural harvests in 1980. Although the area of grain and bean crops in the province in 1980 was 1.2 million mu smaller than in 1979, the 1980 grain and bean output topped those of 1979. The 1980 agricultural production showed 2.3 percent increase in grain, 48.7 percent increase in rapeseed, 11 percent increase in tea and 4.2 percent increase in sugarcane, compared with 1979. [Beijing Xinhua Domestic Service in Chinese 0216 GMT 20 Dec 80 OW]

CSO: 4007

II. PUBLICATIONS

TABLES OF CONTENTS OF 'YUNNAN NONGYE KEJI', NOS 1, 3, 1980

Issue No 1

Kunming YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 1, 25 Jan 80 inside front cover

[Text] Table of Contents

Several Experiences in the Regional Experiment of Superior Varieties of Paddy Rice in Central and Northern Yunnan-- Zhang Yaoqing [1728 1031 3237] of Yunnan Provincal Academy of Agricultural Sciences..... (1)

On the Relationship Between the Growth Characteristics of Healthy Seedlings and Paddy Rice Production-- Li Yuecheng [2621 2588 2052] of the Provincial Academy of Agricultural Sciences..... (4)

Manifestation of the Heading Period of the Hybrid Offspring Generation of Wheat and the Major Economic Characteristics-- Chen Xunru [7115 8113 0320] of the Lincang Regional Agricultural Science Institute..... (7)

Study of the State of Preservation of Bacteria in Seedlings of Paddy Rice Suffering from Bacterial Blight-- Yan Weizhong [0917 0143 0022] and Xia Liqun [1115 4539 5028] of the Department of Plant Protection of the Yunnan Provincial Academy of Agricultural Sciences..... (11)

Exploration of Quarantine and Method of Disinfection of Seeds of Paddy Rice Suffering from Bacterial Blight-- Huang Yexiu [7806 2814 0208] of the Yuxi Regional Agricultural Science Institute..... (13)

Chemical Weeding Experiment for Sugarcane--
Zhang Beiyun [1728 0554 0337] of the Yuanjiang
County Agricultural Science Institute..... (15)

Leaving the Plant To Seed in the Field To
Prevent Degeneration of Potatoes--
Guan Xiangzu [7070 4382 4271] of the
Agricultural Science Station of the Luguan
County Sayingpan Commune..... (17)

Survey of the Problem of the Quality of
Flue Cured Tobacco in Jiangchuan County--
Chu Shouzhuang [5969 1343 8369] of the
Provincial Flue Cured Tobacco
Scientific Research Institute..... (19)

Brief Summary of the Experiment of the
Effectiveness of Spraying Dihydropotassium
Phosphate on Wheat--
Simao School of Agriculture..... (23)

Report on the Experiment of Application
of Humus Ammonium and Phosphorous Humus
Ammonium on Rubber Trees--
Lo Zhongguan [5012 0112 0356] and
Yan Shixiao [0917 0013 1321] of the
Yunnan Provincial Tropical Crop Research Institute..... (25)

Brief Introduction of the Wells Using Thin
Plastic Sheets To Contain Water in Drylands
of Red Soil--Li Kunyang [2621 0981 7122]
of the Provincial Academy of Agricultural Sciences..... (28)

Activities in Foreign Soil Survey Work--
Li Xiangrong [2621 6272 2827] of the
Yunnan Provincial Bureau of Agriculture..... (30)

Techniques of Cultivation of Panax Notoginseng--
Yu Hongjun [0060 3163 6511] and
Wang Shuqin [3769 3219 3830] of the
Agricultural Science Station of the
Chongka "Panax notoginseng" Herb Farm..... (37)

Report on the Inspection of the High Yielding
and Stable Yielding Demonstration Fields of
Mechanized Planting and Province-Wide Factory
Cultivation of Seedlings of Paddy Rice in
Jilin Province--Wu Qiwei [0124 1142 0251]
of the Provincial Agricultural Exhibition Hall..... (40)

Effect of Using TMP and Sulfanilamides
Together To Prevent Cholera in Fowl--
Wu Wenzhen [6079 2429 3791] and
Wang Qun [3769 2938] of the Provincial
Animal Husbandry Veterinary Research Institute..... (44)

How To Improve the Quality of Wheat Grains--
A. A. Sozinov
Translated by Yang Shicheng [2799 0013 6134]..... (46)

Issue No 3

Kunming YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 3, 25 May 80 inside front cover

[Text] Table of Contents

Opinions on Strengthening Our Province's
Work in Scientific Planting--
Yunnan Provincial Academy of Agricultural Sciences..... (1)

Implement Rational Interplanting and
Companion Planting--Seize Increased
Production of Dry Food Grains--
Food Grain Crop Institute of the
Provincial Academy of Agricultural Sciences..... (5)

Heavy Application of Nitrogen and Phosphorous
Fertilizers in Dryland of Red Soil Is Very
Effective in Increasing Yield--
Soil Fertilization Institute of the
Provincial Academy of Agricultural Sciences..... (7)

Experiment on Selection of Multiple Superior
Factors and Planting Formats of Wheat
With a Companion Crop of Corn--
Lai Zhongmin [6351 5883 3046] and
Wang Zhenhong [3769 2182 3163] of the
Corn Laboratory of the Food Grain Crop
Institute of the Yunnan Academy of Agri-
cultural Sciences and Zhu Yu [2612 3768] of the
Agricultural Techniques Station of Xuanwei County..... (9)

Brief Summary of the Experiment of Food
Grain Fields That Produced One Ton of
Food Grains in 1979--Agricultural Science Insti-
tute of the Guandu Ward of Kunming City..... (17)

Preliminary Exploration of Techniques of
Cultivation of High Yielding Paddy Rice--
Wang Xuehui [3769 1331 2585] of the Academy
of Agricultural Sciences of the Yuxi
Administrative Office..... (22)

Study of the Pattern of Supply of Fertilizers in the Soil and Rational Application of Fertilizers for Paddy Rice--
Chen Xianzu [7115 2009 4371] and Zhou Jiaqi [0719 1367 7871] of the Yunnan Academy of Provincial Agricultural Sciences, Xie Hai [6200 3189] of the Zhongba Agricultural Science Station of Longquan Commune, and Yang Defu [2799 1795 1381] of the Science and Technology Group of the Shangba No 1 Brigade of Longquan Commune..... (26)

The Effect of Planting Without Tilling and Covering Upon the Soil Fertility of Dryland of Red Soil--Ye Huimin [5509 1920 3046], Fan Yongyan [2868 3057 6056], Rao Benhua [7437 2609 5478]..... (32)

The Effect of Mixed Fertilizers of Trace Elements of Humic Acid Ammonium Upon Cotton--
Cheng Tingfu [4453 1656 4395] of the Cotton Research Institute of the Provincial Academy of Agricultural Sciences..... (36)

Preliminary Report on the Study of Deficiency of Potassium in Rape--Yan Weizhong [0917 0143 0022], Yang Shicheng [2799 0013 6134] and Zhang Yanshu [1728 1693 6551]..... (38)

Preliminary Report on the Survey of Hydrellia Sasakii of Rice in the Kunming Region--
Yang Zengshi [2799 2582 1395] of the Agricultural Science Institute of Kunming City..... (42)

Brief Report on Chemically Induced Male Sterility in Geng Rice--
Xiong Jianhua [3574 1696 5478], Fan Pinggui [5400 0756 6311] of the Yunnan Provincial Academy of Agricultural Sciences..... (43)

Report on the Effect of Irrigation of Paddy Rice by "Magnetized Water"--
Zhong Yi [6945 3015], Zhao Zhichang [6392 1807 2490] of the Soil Fertility Group of the Pingbian County Agricultural Science Institute..... (45)

Humus and Its Effect on Living Beings--
W. Plaig of West Germany..... (46)

9296
CSO: 4007

TABLE OF CONTENTS OF 'ZIRAN ZIYUAN' NO 2, 1980

Beijing ZIRAN ZIYUAN [NATURAL RESOURCES] in Chinese No 2, 3 Jun 80 inside back cover

[Text] The Major Breeds and Ecological Characteristics of Domestic Animals in China.....Zheng Piliu [6774 0012 3966], Chinese Academy of Agricultural Sciences (1)

The Land Types and Principles of Assessment in Agricultural Utilization of Qinghai-Xizang Plateau.....Sun Honglie [1327 7703 3525], Natural Resources Comprehensive Survey Committee, Chinese Academy of Sciences (10)

Water Resources of the Xizang Rivers.....Guan Zhihua [7070 1807 5478] and Chen Chuanyou [7115 0278 0645], both of the Natural Resources Comprehensive Survey Committee, Chinese Academy of Sciences (25)

A Study of Ecological Distributional Characteristics and Principles of Domestic Animals in the Xizang Plateau.....Huang Wenxiu [7806 2429 4423] and Wang Sufang [3769 4790 5364], both of the Natural Resources Comprehensive Survey Committee, Chinese Academy of Sciences (36)

The Climate for Animal Husbandry in Xizang.....Zhang Yiguang [1728 6146 0342], Natural Resources Comprehensive Survey Committee, Chinese Academy of Sciences (43)

The Swamps in Northeastern China.....Niu Huanguang [3662 3562 0342] and Zhang Yangzhen [1728 7402 6297], both of the Natural Resources Comprehensive Survey Committee, Chinese Academy of Sciences (53)

A Study of the Test of Multispectrum Photography on the Ground..... Wang Changyao [3769 7022 5069] and Zheng Lanfen [6774 5695 5358], both of the Institute of Applied Remote Sensing, Chinese Academy of Sciences (66)

An Analysis of Ecological Conditions of Wheat and the Measures of Raising Its Production in Taoyuan County.....Liu Houpei [0491 0624 1014], Natural Resources Comprehensive Survey Committee, Chinese Academy of Sciences (77)

Discussion

The Utilization and Conservation of Natural Resources in Xishuangbanna .....Shi Yulin [4258 3768 2651], Natural Resources Comprehensive Survey Committee, Chinese Academy of Sciences (84)

A Preliminary Discussion on the Sequence of Construction of the Northward Diversion from Southern Waters.....Huang Rangtang [7806 6245 1016], Natural Resources Comprehensive Survey Committee, Chinese Academy of Sciences (90)

Academic Activities

Successful Conclusion of the Scientific Symposium on the Qinghai-Xizang Plateau..... (99)

9717
CSO: 4007

TABLE OF CONTENTS OF 'NONGYE JIXIE' NOS 3-7, 1980

Beijing NONGYE JIXIE [FARM MACHINERY] in Chinese Nos 3-7, 1980

[No 3, 1980 p 40]

[Text] Farm Machinery and Agricultural Techniques Should Work Closely Together.....Xiang Nan [4161 0589] (2)

Handling Relationship between Tractor Station and Production Brigade Well Increases Yield and Income.....Daye County Farm Machinery Bureau Inspection Team, Hubei (5)

More Sheep Clippers Needed.....Zhong Shi [6945 4258] (9)

A Finalized Product: 9SQ-10 Silage Combine.....Tall-Stemmed Crops Harvesting Group, Room 2, Institute of Farm Tools and Machinery, Chinese Academy of Agricultural Machinery (12)

Indoor Test of Head-in Threshing Mecha[illegible]a.....Jin Chenglie [6855 2110 3525] and Liu Guanghai [0491 1639 3189], both of the Chinese Academy of Agricultural Machinery (14)

Excerpts from Articles Sent in by Readers..... (15)

Manufacturing Error Effect on Performance of Centrifugal Pump .....Zhang Xuqing [4545 2485 3237], Anhui Institute of Farm Machinery (16)

Another Large Pivot Irrigation Sprinkler Successfully Trial-Produced.....Wang Zongwu [3769 4844 2976], Jiangsu Large Irrigation Sprinkler Joint Design Group (18)

Automatic Power Milker.....Automatic Milking Machine Trial Manufacture Team, Beijing (19)

Brief Information: Five Items..... (22, 23, 30)

A New Steering System in Dongfanghong-28--Its Structure and Operation.....Li Quanshu [2621 0356 1859], Changchun Tractor Works Design Department (26)

Renewal of Worn Out Hole in the Adjusting Lever of Fuel Injection Pump.....He Bingchang [0149 3521 2490], Fangcaohu Farm Manufacture and Repair Works, Xinjiang (29)

News: Why W. H. Hinton Has Stopped Running His Farm.....Xin Zi [0207 1311] (31)

Foreign Techniques: Three Items.....Zheng Youde [6774 2589 1795] (32)

How to Wind a Spring on a Lathe.....Chen Yingmo [7115 5391 5459], Heilongjiang Suihua Machine Tool Works (36)

On Maintenance..... (38)

On Repairing and Manufacturing..... (39)

Advertisement: Hydraulic Power Steering Unit and One-Way Flow Dividing Valve Advertized by Shangdong Jining Hydraulic Elements Works..... (40)

Front Cover: The Embroidery of a Rice Field

Inside Front Cover and Inside Back Cover: An Inspection of Taiwan's Farm Machinery

Back Cover: Power Driven Rice Transplanter--A Product of Shanghai Xian Farm Machine Repairing and Manufacturing Works

[No 4, 1980 p 40]

[Text] Struggle for Higher Level of Farm Machine Management..... Wu Shaowen [0702 1421 2429] (2)

A Decision by the Ministry of Agricultural Machinery on Commending the Advanced Units and Model Workers in the Field of Farm Machine Management..... (4)

A Proposal by the Representatives of Advanced Units and Individuals in the Field of Farm Machine Management..... (6)

Some Disputes Concerning Current Farm Mechanization Problems..... Lin Qihui [2651 0366 6540] (8)

Let the Campaign for High Quality Have Its Full Swing.....Ping Zhendong [1627 7201 2639] (11)

Developing Wheat Harvesting Machinery for Urgent Needs..... Ji Yecheng [1213 2814 2052] (12)

Some Instructions on Model Ji-185 Vertical-type Reaper Operation .....Bai Ling [4101 5376], Chinese Academy of Agricultural Machinery (13)

Getting the Best from 2BZ-4, 2BZ-6 Toolbar Mounted Drill-Cultivator .....Sun Yunzhou [1327 6663 1558], Chinese Academy of Agricultural Machinery (16)

Improvements in Small-Size Cold-Wind Blast Furnace.....Zhu Zhenhua [2612 2182 5478] (22)

Demonstrator for the Tractor Electric System.....Guo Zhenquan [6753 2182 0356], Dongling Farm Machinery School, Shenyang (25)

On Maintenance..... (31)

On Repairing and Manufacturing..... (32, 33)

Brief Information..... (18, 21, 39, 40)

Front Cover: Tea Mower in Operation

Inside Front Cover: Advertisement Introduced by Nan-Yuan Farm Machine Works, Beijing

Inside Back Cover: Advertisement Introduced by Tong-Lu Farm Machine Repairing and Manufacturing Works, Zhejiang Province

Back Cover: A Structural Sketch of Dongfanghong-28 Tractor--Lubricating System

[No 5, 1980 p 38]

[Text] Adhere to Principle of "Quality First".....Huang County Farm Machinery Manufacture and Repair Plant, Shandong (2)

Discussion on Working Method: Some Suggestions on Farm Machine Maintenance Work.....Liu Zhong [0491 1813], Heilongjiang Institute of Farm Machinery Repair (3)

Rectification of Tractor Station..... (5)

Advertising Means Profit for Manufacturers and Convenience for Customers.....Qi Wenbin [7871 2429 2430], Huaide Pump Plant, Jilin (7)

Brief Information: Four Items..... (10)

Finalized Products

Model 9WL-580 Chain Type Bunk Feeder..... (16)

Model XY-200 Pneumatic Conveyer..... (18)

Model 7YD-500 Hydraulic Hoist Unit for Farm Use..... (19)

Abstracts from Foreign Periodicals..... (23)

The Viability of the Small Grain Lifter on Vertical Cutting Table .....Mao Guocang [3029 0948 0263], Chinese Academy of Agricultural Machinery (24)

On Maintenance..... (29)

On Repairing and Manufacturing..... (30, 31)

Radial Tapping Machine--Simple in Structure.....Tan Yanpu [6223 1750 2883], Aihui Farm Machinery Manufacture and Repair Plant, Heilongjiang (33)

Vegetable Mechanization in Japan..... (35)

Advertisement: Products by Cixi Farm Power Works, Zhejiang Province (39)

Front Cover: Making Spring Year 'Round

Inside Front Cover: Advertisement: Products by Guangrao Drill Works, Shandong Province

Inside Back Cover: Advertisement: Products by Guangrao Farm Machine Works, Shandong Province

Back Cover: Advertisement: Products by John Deere, Ltd., U.S.A.

[No 6, 1980 p 48]

[Text] The Miracle Worker..... (2)

If Everyone Were Like Xu Yongshan [1776 3057 1472].....Xiang Nan [7309 0589] (3)

Model 1AD-88 Belt-type Soil Scraping-Thrower..... (10)

Achievement in Sugar Beet Mechanization at Experimental Station, Jilin Province.....Zhao Hui [6392 6540], Management Office, Jilin Agricultural Machinery Bureau (13)

A New Member in Rural Energy Sources--Solar Energy.....Xie Guoguang [6200 0948 0342] (14)

What Factors Affect Grain Harvesting Losses?..... (18)

Reaping a Rich Harvest of Rice by Aerial Seeding.....Liaoning Reclamation Bureau Farm Machinery Office (22)

Model MGE-5 Hand-Operated Electrostatic Sprayer.....Jiang Guomin [5592 0948 3046] (23)

A Calculating Method for Determining the Height in Installing Pump.....Guan Xingfan [7070 6821 0416] (24)

Managing Farm Machinery Repair in an Economic Way..... (28)

A Discussion of Running-in of Engine.....Xue Bosen [5641 0130 2773], Langfang Regional Farm Machinery School, Hebei (30)

On Maintenance..... (38)

On Repair and Manufacturing..... (40)

Universal Joint Drive Shaft Used in Agriculture Abroad..... Wu Sihang [0702 1835 5300], Yue Xiumei [2867 4423 2734] and Zhou Xuemin [0719 1331 3046], all of the Chinese Academy of Agricultural Machinery (42)

Advertisements

Special Expandable Fixtures for Machining Parts in Ring-like Shape..... (44)

The Products Made in Jinghai Xian Tangguantun Machine Tool Works, Tianjin..... (47)

Front Cover: The Advanced Tractor Operators, Xu Yongshan and Others, Visiting in Beijing

Inside Front Cover: Advertisement--The Products Manufactured by Huang County Oil Pump and Nozzle Factory, Shandong Province

Inside Back Cover: Advertisement--Introduced by Tong-Lu Farm Machine Repairing and Manufacturing Works, Zhejiang Province

Back Cover: The Structural Diagram for Dongfanghong-28 Tractor

[No 7, 1980 p 40]

[Text] Doing Our Utmost in a Down-to-Earth Style--Answers by Minister of Agricultural Machinery Yang Ligong to Questions from FARM MACHINERY Reporter..... (4)

Recent Developments: Eight Items..... (6)

China-Initiated Boat-Type Tillage Machines Are Being Produced by Honghu Xian Farm Machinery Works..... (8)

Finalized Products

1. "Pasture" Brand, Model GJ-2 Milker..... (10)

2. Model 5XZ-1.0 Gravity Precision Seed Sorter..... (12)

A Revised Model of Dongfeng-5 Combine Harvester Will Appear Soon..... (14)

A Brief Account of the Development of Dryers in China..... (17)

On Praising and Criticizing: Two Items

A Symposium on Rotting and Drying of Wheat Convened by the Beijing Society of Agricultural Machinery..... (18)

Well Drilling Deviation, Its Prevention and Correction.....Xie Yongsheng [6200 3057 3932] (21)

Test Your Technical Proficiency.....Jingzhou Farm Machinery Bureau, Hubei (23)

A New Type of All-Flow-In Centrifugal Oil Filter.....Xu Yuwen [1776 3768 2429], First Tractor Plant Design Office, Luoyang (25)

A New Method for Prolonging Service Life of a Distribution Pump-Double Controlled Throttle.....Gong Deyuan [7895 1795 0337], Maiyang Farm Machinery Plant No 2, Hunan (29)

Boring a Large Deep Hole on an Ordinary Engine Lathe.....Wang Zhengyuan [3769 2973 0337], Yuncheng Industrial Bureau, Shanxi (33)

On Maintenance..... (35)

On Repairing and Manufacturing..... (36)

Front Cover: Advertisement by Honghu County Farm Machinery Works, Hubei Province

Inside Front Cover: Advertisement by Shijiazhuang Seeding Machine Factory

Inside Back Cover: Advertisement by Dandong-518 Tractor Factory

Back Cover: A Structural Sketch of Dongfanghong-28 Tractor--Cooling System

9717
CSO: 4007

TABLE OF CONTENTS OF 'KUNCHONG XUEBAO' NO 4, 1980

Beijing KUNCHONG XUEBAO [ACTA ENTOMOLOGICA SINICA] in Chinese No 4, Nov 80 preceding p 341

[Text] Studies on the Microsomal Cytochrome P-450 and Amidase from Antheraea pernyi Guer.....Lin Hao [2651 3185] and Zou Baixiang [6760 2672 4382], both of Shanghai Institute of Entomology, Chinese Academy of Sciences; Xu Tingsen [6079 1694 2773], Shanghai Institute of Biochemistry, Chinese Academy of Sciences (341)

Studies on the Resistance of Dipterex-Resistant Mosquito Culex p.piens pallens Coq.--On the Relationship between Hydrolase and Resistance.....Chen Qiaoyun [7115 1564 0061], Jiang Jialiang [1203 1367 5328], Lin Guofang [2651 0948 5364] and Liu Weide [0491 4850 1795], all of Shanghai Institute of Entomology, Chinese Academy of Sciences (350)

Influence of Temperature on the Growth of Laboratory Population of the Cotton Bollworm, Heliothis armigera (Hubner).....Wu Kunjun [0702 0981 0689], Chen Yuping [7115 3768 1627] and Li Minghui [2621 2494 6540], all of the Institute of Zoology, Chinese Academy of Sciences (358)

Studies on the Photoreactic Behavior of Nocturnal Moths: Analysis of the Causes of Flight Toward a Lamp.....Gao Weizeng [7559 1983 2582], Institute of Zoology, Chinese Academy of Sciences (369)

Induction and Inhibition of Caste-Differentiating Potentials in Reticulitermes flavicrps (Oshima).....Dai Jida [2071 1323 6671], Shanghai Institute of Entomology, Chinese Academy of Sciences (374)

The Attraction of Pine Caterpillar Moths (Dendrolimus punctatus Walker) to Light-Traps.....Yan Jingjun [0917 7234 0689], Zhou Shuzhi [0719 3219 5365] and Xiao Gangrou [5135 0474 2677], all of the Institute of Forestry, Chinese Academy of Sciences (381)

A Preliminary Observation on Aphanostigma iekusuiense (Kishida) .....Feng Tinglun [7455 1694 0243], Institute of Agriculture of Aba Zhangzu Zizhizhou, Sichuan (389)

Identification and Isolation of Translocations in the Mosquito Culex pipiens pallens Coq. .....Huang Pinjian [7806 0756 4702], Miao Jianwu [4924 1696 0710] and Jiang Wenbin [5592 2429 2430], all of Shanghai Institute of Entomology, Chinese Academy of Sciences (394)

Observations on the Common Blood-Sucking Ceratopogonidae Midges in Fujian.....Chen Kangchuan [7115 0073 1557] and Cai Lianlei [5591 6647 0171], Fujian Research Institute of Epidemic Diseases (401)

Studies on Chinese Protura: A New Genus of Acerentomidae from Hangzhou.....Yin Wenying [1438 2429 5391], Shanghai Institute of Entomology, Chinese Academy of Sciences (408)

New Species and New Genus of Delphacidae from China.....Ge Zhonglin [5514 6945 7792], Anhui Agricultural College; Huang Qilin [7806 0366 2651; deceased], Tian Lixin [3944 4539 2450] and Ding Jinhua [0002 6930 5478], all of Nanjing Agricultural College (413)

A Revision of the Chinese Species of Papilio machaon L. and Their Geographical Distribution.....Li Chuanlong [2621 0278 7150], Institute of Zoology, Chinese Academy of Sciences (427)

A New Species of the Genus Hoenimgma from Qinghai (Lep.: Lasiocampidae).....Xu Zhenguo [1776 2182 0948], Institute of Forestry, Qinghai Academy of Agriculture and Forestry (432)

Study on the Culex vishnui Subgroup in China with Discussions on the Taxonomic Status of C. neovishnui Lien, C. permixtus Heish and Liao and C. chen; Ho.....Chen Hanbin [7115 3352 1755], Department of Biology, Guiyang Medical College (434)

A New Genus and a New Species of Spider Mites from South China (Acarina: Tetranychidae).....Ma Enpei [7456 1869 3099], Shanghai College of Agriculture; Yuan Yilan [5913 5669 5695], Museum of Natural History, Shanghai (441)

Scientific Notes

Records of Some Forest Insects Viruses.....Chen Tingwei [7115 1694 0251], Xu Lingmei [1776 3781 3780], Chen Wanhua [7115 1238 5478] and Huang Yuanyi [7806 3293 4135], all of the Laboratory of Microbiology, Institute of Soil and Fertilizer, Chinese Academy of Agricultural Sciences (443)

Observation on the Orientation of the First Cleavage of the Fertilized Egg of Bombyx mori.....Sun Chengxian [1327 2110 6897], Sericulture Institute, Chinese Academy of Agricultural Sciences (445)

Bionomics of the Leaf Miner Lithocolletis sp. .....Zhang Shiquan [1728 0013 2938], Forestrial School, Hubei Province (447)

9717
CSO: 4007

TABLE OF CONTENTS OF 'QIXIANG' NO 11, 1980

Beijing QIXIANG [METEOROLOGICAL MONTHLY] in Chinese No 11, 10 Nov 80 p 40

[Text] Main Contents

A Study of the Cold Damage Index for Late Rice and Its Variable Patterns.....Meteorological Cooperation Group for National Research of Hybrid Rice (1)

A Verification of the Long-Range Weather Forecasting for the Last 10 Years.....Ye Yuyuan [5509 1937 3293], Hunan Meteorological Station (5)

The Analysis and Prediction of the Drought and Excessive Rainfall in the Southern Changjiang Valley in Relation to the Sun and Moon .....Chen Juying [7115 5468 5391] (7)

The Influence of Weak Subsidence on the Diffusion of SO_2 in the Beijing Region.....Li Yuzhu [2621 6735 4554] and Feng Xiumei [2075 4423 2734], both of the Weather and Climate Institute, Academy of Meteorological Sciences (12)

Discussions

On the Divisions of Plum Rains [Mei-yu].....Li Guangchun [2621 1639 2504], Anhui Meteorological Bureau (14)

Weather Forecasting at County Meteorological Stations

A Study on the Feasibility of a Single Correlation Factor..... Teng Jiamo [3326 1367 6206], Liangping Meteorological Station, Sichuan (16)

Observations and Instruments

Some Characteristics of the Clouds in the Xizang Plateau..... Chen Hongtian [7115 3163 3944] (23)

Basic Knowledge

Talks on Gravitational Waves.....Yu Zhihao [0151 1807 6275], Department of Meteorology, Nanjing University (25)

Local Weather and Climate

Climate in Aksu.....Sun Xiangbin [1327 4382 1755], Aksu Regional Meteorological Station, Xinjiang (29)

A Course of Lectures

The Methods of Calculating Some Physical Parameters for Heavy Rain Forecasting (VII) Wet Static Energy and Wet Static Temperature .....Wen Baoen [2429 1405 1344] (31)

Basic Knowledge of Cloude

Macroscopic Characteristics of Clouds.....Tong Letian [4547 2867 1131] (33)

Monthly Weather

August 1980--Continued Waterlogging in South China, A Long Dry Spell in North China.....Dong Liqing [5516 4539 3237] and Xu Xianan [1776 1115 8189] (37)

9717
CSO: 4007

END

JPRS 77200

19 January 1981

China Report

AGRICULTURE

No. 118

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JPRS 77200

19 January 1981

CHINA REPORT

AGRICULTURE

No. 118

CONTENTS

I. GENERAL INFORMATION

National

PRC Peasant Income Rises 19.9 Percent in 1979
(XINHUA Domestic Service, 2 Jan 80)..... 1

Chinese Peasant Income Increases in 1980
(XINHUA, 2 Jan 81)..... 4

PLA Corps Succeeds in Finding Underground Water
(XINHUA, 10 Dec 80)..... 5

PRC Progress in Typhoon Research Reported
(XINHUA, 17 Dec 80)..... 7

Briefs
Tree Cutting Ban 9
Plant Protection 9
Cotton Plan Overfulfilled 9
Cadre Training Course 10
National Conference in Fujian 10
Cotton Procurement 10
Cold Storage in 1980 10

Anhui

Briefs
Cotton Procurement 11
County Procurement 11
Cotton Procurements 11
Grain Output 11
Fisheries' Production 11
Cotton Output 11

[III - CC - 82]

Agriculture Harvests 11
Ramie Production 12
Afforestation Meeting 12

Beijing

Briefs
Forest Belts 13
Meat, Eggs 13

Fujian

PRC Clears Underwater Obstacles Near Niushan
(XINHUA, 25 Dec 80)..... 14

Briefs
Agricultural Production 15
Water Conservancy Meeting 15
Sugarcane Acreage 15
Agricultural Production 15

Gansu

Briefs
Edible-Oil Crops 16
Grain Production 16
Beet Production 16

Guangdong

Briefs
Agricultural Harvests 17
Sugar Procurement Circular 17
Hainan Cattle-Breeding 17
Farm Produce 17

Guangxi

Briefs
Pig Procurement 18
Grain Harvest 18

Guizhou

Briefs
Edible Oil 19
Agricultural Production 19
County Prosperity 19
Agricultural, Sideline Production 19

Hebei

Briefs

Animal Raising 20
Oil-Bearing Crops 20
Grain Procurement 20

Heilongjiang

Briefs

Agricultural Production 21
Agricultural Output 21
Festival Rations 21
Marketable Grain 21

Hubei

Briefs

Grain Procurement Exemption 22

Hunan

Briefs

Good Cotton Harvest 23

Jiangsu

Briefs

Cotton Harvest 24
Cotton Production 24
Bumper Harvest 24
Agricultural Harvests 24
Autumn Harvest 24
Marketable Grain 24
Winter Crops 25
Aquatic Products 25

Jiangxi

Briefs

Jute, Hemp Production 26
Water Conservancy Projects 26
Grain Inspection 26
Water Conservancy Conference 26

Jilin

Briefs

Grain Procurement 27
Grain Procurements 27
Agriculture Production 27

Animal Husbandry 27
Agricultural Output 27
Grain Production 27

Liaoning

Briefs
Harvest Results 28
Agricultural Procurement 28
Edible Oil Ration 28
Marketable Grain 28
County Harvests 28
County Grain Output 29
Grain, Cotton Output 29

Nei Monggol

Briefs
Afforestation Efforts 30
Grain, Oil-Bearing Seeds 30
Cocoon Procurement 30
Oil-Bearing Seeds 30
Sugarbeet Production 30
Fodder Grass 30
Rapeseed Procurement 30
Livestock Procurement 31
Livestock Transfer 31
Grain Production 31
Grain Procurement 31
Oil-Bearing Crops 31
Grain Output 31

Ningxia

Briefs
Livestock Breeding 32

Qinghai

Briefs
Grassland Conservation 33
Seed Farms 33

Shaanxi

Briefs
Circular on Winter Irrigation 34
Afforestation Efforts 34

Shandong

Briefs

Water Conservancy Projects 35
Prefectures' Production 35
County Grain 35
Tobacco Production 35
Cotton Output 35

Xinjiang

Briefs

Agricultural Zoning 36
Animal Procurement 36
Cold-Resistant Apple 36

Xizang

Briefs

Grain Production 37

Zhejiang

Briefs

Silk Production 38
Huzhou Silk Production 38
Cotton Production 38
Cocoon Production 38

II. PUBLICATIONS

Table of Contents of 'QIXIANG' No 10, 1980..... 39

ABSTRACTS

AGRICULTURAL MACHINERY

NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY], No 1, 3, 1980..... 41

PEDOLOGY

TURANG XUEBAO [ACTA PEDOLOGICA SINICA], No 4, Nov 80..... 53

I. GENERAL INFORMATION

PRC PEASANT INCOME RISES 19.9 PERCENT IN 1979

OW031432 Beijing XINHUA Domestic Service in Chinese 0806 GMT 2 Jan 80

[Text] Beijing, 2 Jan (XINHUA)--According to a survey report released by the State Statistical Bureau, a noticeable improvement has been made in the livelihood of our country's peasants and a new change has taken place in the structure of their consumption.

The report on the survey of 10,282 commune member households in 23 provinces, municipalities and autonomous regions says each commune member received an average net income of 160.2 yuan in 1979, 26.6 yuan or 19.9 percent more than in 1978.

The survey report by the State Statistical Bureau covers the following six aspects:

Commune Members' Level of Consumption Rises, and the Proportion of Income Spent on Food Drops While That on Clothing, Necessities for Daily Use and Housing Increases

The average yearly spending of each member of the 10,282 peasant households for daily necessities in 1979 was 134.5 yuan (excluding what was provided free of charge), 18.5 yuan more than in 1978 or a 15.9 percent increase. In 1979, he spent 86 yuan on food, 7.4 yuan more than in 1978; 17.6 yuan on clothing, 2.9 yuan more than in 1978; 7.7 yuan on housing, 4 yuan more than in 1978; 11.1 yuan on necessities for daily use, 3.5 yuan more than in 1978; 8.3 yuan on firewood or fuel for cooking and heating, 0.1 yuan more than in 1978; and 3.7 yuan on cultural activities and services, 0.5 yuan more than in 1978.

A change has begun to take place in the proportions of the commune member's spending for daily necessities. The proportion of income spent on food dropped from 67.7 percent in 1978 to 63.9 percent in 1979; that on clothing increased from 12.7 percent in 1978 to 13.1 percent in 1979; that on housing went up from 3.2 percent in 1978 to 5.7 percent in 1979; that on necessities for daily use rose from 6.6 percent in 1978 to 8.3 percent in 1979; that on firewood or fuel decreased from 7.1 percent in 1978 to 6.2 percent in 1979; and that on cultural activities and services increased from 2.7 percent in 1978 to 2.8 percent in 1979.

The Amount of Food Consumed Increases and Its Quality Improves

The average yearly expenditure of each member of the 10,282 peasant households for staple food in 1979 was 55.4 yuan, 4 yuan more than in 1978 or a 7.9 percent increase; and that for nonstaple food in 1979 was 27.9 yuan, 3.2 yuan more than in

1978 or a 12.9 percent increase. The percentage increase in spending for nonstaple food in larger than that for staple food, which shows an improvement of the quality of food consumed by commune members.

The specific situation in the consumption of various foodstuffs is as follows: the average yearly consumption of food grains (unprocessed food grains) by each commune member went up from 495.6 jin in 1978 to 513.5 jin in 1979, a 17.5-jin increase. His consumption of fine food grains (rice and wheat) increased 33.9 jin. The amount of such major nonstaple foods as cooking oil, meat, poultry, eggs, sugar and wine consumed by commune members increased considerably. The amount of cooking oil, meat, poultry, eggs and wine consumed increased by 10 percent or more compared with 1978. However, the amount of beef, mutton, fish and shrimp consumed decreased compared with 1978. It should be noted that commune members' consumption of vegetables also decreased when compared with 1978.

Commune Members Buy More Woolen and Silk Fabrics, Knitting Wool and Other High- and Middle-Grade Goods

Commune members bought much more cotton, chemical fabrics, woolen and silk piece goods, knitting wool and rubber shoes, but less cotton cloth, in 1979 than in 1978. The sale of woolen and silk fabrics rose by 140 percent and 150 percent respectively, and the sale of chemical fabrics and knitting wool (including woolen knitwear) went up more than 75 percent. These changes show that the quality of peasants' clothing has improved.

The possession by peasant households of high- and middle-grade goods such as bicycles, sewing machines, radio sets, watches and clocks has recorded remarkable increases. For every 10 of the 10,282 peasant households there were 3.6 bicycles, 2.3 sewing machines, 2.6 radio sets and 5.5 watches and clocks in 1979, registering remarkable increases over 1978. The supply of such goods for the countryside is now very small and can hardly meet communes members' needs. According to a survey of the Liulin Production Brigade by Beijing Municipality, 350 households of the brigade (accounting for 88.3 percent of the brigade's total number of households) are planning to buy bicycles, sewing machines, television sets and large wardrobes. A survey of 80 households by Sheyang Municipality shows that 37.6 percent of them are planning to buy such high-grade goods as bicycles, radio sets, watches and television sets. However, since these goods are sold by ration coupon only, it is difficult for them to have their needs satisfied.

More New Houses are Built, and Housing Conditions Improve

On the average, each of the 10,282 percent households built 0.22 new rooms in 1979, and the average cost for building a room was 267.6 yuan. Newly-built houses accounted for 5.7 percent of the houses occupied.

With the increase of new houses, commune members' housing conditions have improved. On the average, each peasant household occupies 3.8 rooms. According to reports, commune members are now very enthusiastic about building houses; however, building materials are in short supply.

The Purchasing Power of Commune Members Increases, and the Proportion of Income Spent on Commodities Rises

With the development of production, commune members' incomes have increased and their purchasing power has risen remarkably. On the average, each commune member's cash income was 77.8 yuan in 1979, 17.2 yuan more than in 1978 or a 28.4 percent increase. His out-of-pocket expenses were 72.7 yuan in 1979, 15.4 yuan more than in 1978 or a 26.8 percent increase. On the average, each commune member had 9.87 yuan in cash on hand in early 1979 and 13.2 yuan on hand by the end of the year, increasing 3.15 yuan of 31.9 percent.*

As a result of the increase in commune members' purchasing power, a change has taken place in the proportion of their income spent on commodities and the consumption of their self-supporting items. On the average, each commune member spent 58.25 yuan on commodities in 1979, 13.41 yuan more than in 1978. This represents an increase from 36.7 percent in 1978 to 43.3 percent in 1979. The consumption of his self-supporting items was worth 72.56 yuan in 1979, 4.5 yuan more than in 1978. However, this represents a decrease from 58.6 percent in 1978 to 53.9 percent in 1979.

Peasants' Livelihood Improves, But Their Living Standards are Still Very Low and Peasants are in Dire Straits in Some Areas

The livelihood of the 10,282 peasant households improved in 1979, but their living standards were still very low. A large number of new houses were built, but their original houses were made of sun-dried mud bricks, thatching and bamboo. The living standards for peasants vary greatly in different areas. The level of consumption for commune members in some areas is very low. For example, the average monthly spending by each commune member for daily necessities in Gansu, Henan, Yunnan and Guizhou is less than that spent by each member of the peasant households surveyed in the country.

CSO: 4007

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*The information on cash income and out-of-pocket expenses is based on a survey of 5,385 peasant households in 11 provinces, municipalities and autonomous regions.

CHINESE PEASANT INCOME INCREASES IN 1980

OW020726 Beijing XINHUA in English 0710 GMT 2 Jan 81

[Text] Beijing, January 2 (XINHUA)--Each Chinese peasant received an average net income of 160.2 yuan in 1979, 26.6 yuan or 19.9 percent more than 1978, according to a report released recently by the State Statistical Bureau.

One hundred and two yuan of the net income came from the collective, a 14.6 percent increase over 1978, and 44 yuan from household side-line occupations, or 25.3 percent more than in the previous year.

The report says an investigation of the income and expenditure of 10,282 representative peasant households in 23 provinces, municipalities and autonomous regions attributed the improvement to the growth of the rural collective economy, higher state purchasing prices for farm produce, and encouragement of domestic side-line production.

The report reveals that the average yearly spending of each rural resident for daily necessities in 1979 was 134.5 yuan, 18.5 yuan over that of 1978, a 15.9 percent increase.

The proportion of income spent on food dropped from 67.7 percent in 1978 to 63.9 percent in 1979 while that on clothing and cultural activities increased.

The peasants bought more non-staple foods. The amount of cooking oil, meat, poultry, eggs, wine and liquor they consumed increased by ten percent or more compared with 1978, the report says. The amount of sugar consumed also increased.

The peasants bought much more cotton, chemical fabrics, woollen and silk piece goods, knitting wool and rubber shoes, but less cotton cloth. The sale of woollen and silk fabrics rose by 140 percent and 150 percent respectively. Chemical fabrics and knitting wool (woollen knitwear) went up 75 percent.

The average possession by every ten households of bicycles, sewing machines, radio sets, and watches and clocks recorded remarkable increases over 1978. Every ten households had 3.6 bicycles and 2.3 sewing machines.

The Statistical Bureau report says that about 10 percent of the peasant families received only less than 80 yuan per capita.

CSO: 4020

PLA CORPS SUCCEEDS IN FINDING UNDERGROUND WATER

OW101232 Beijing XINHUA in English 1218 GMT 10 Dec 80

[Text] Beijing, December 10 (XINHUA)--The capital construction engineering corps of the Chinese People's Liberation Army has found abundant underground water along all of China's dry border areas, it was announced at a congress of the corps' hydrogeological unit which closed here today.

The unit, formed in 1974, completed surveys and reports on more than 1.9 million square kilometers by the end of October this year in China's 13 border provinces and autonomous regions.

Some 50,000 square kilometers of inner Mongolia's grasslands, one of the country's major stockraising areas, which were formerly unusable because of shortage of water, now have greater potential since the unit found 14 ancient river courses and water-rich zones.

One new well, in a zone 125 kilometers long by five kilometers wide, is producing 6,000 tons of water daily. The zone is thought to be capable of providing enough water for 60,000 hectares of pasture.

The unit has found 15 basins where artesian wells can be sunk in the Tengger, Badian Jaran and Ulan Buh Deserts, covering a total area of 13,600 square kilometers. Ten wells have been drilled so far, producing between 300 tons and 2,000 tons of water daily.

On the grasslands of northwest Sichuan Province, the unit discovered underground water resources with an annual storage of 5,200 million cubic meters. This has already been tapped for irrigation.

In the Karst areas of southwest China, the unit found some 2,000 underground rivers with a total length twice that of China's longest river, the Yangtze.

Some 250,000 million cubic meters of water flow through these rivers, enough for local people's domestic and industrial needs.

The unit has also found terrestrial heat spots--ground areas of concentrated heat--mainly in the southwest and northwest. About 70 percent of them contain very hot water.

One well drilled in Yunnan Province produces 1,000 to 3,500 tons of hot water each day. The well is in a heat area measuring 450 kilometers by 330 kilometers and the State Energy Department has listed the zone as a key construction site. Preparations are under way for the building of a terrestrial heat power station.

More than 20 heat zones and some hot springs have been found in the Qilian mountain area and the Hexi corridor in northwest China, where factories have already started to harness the heat.

CSO: 4020

PRC PROGRESS IN TYPHOON RESEARCH REPORTED

OW170718 Beijing XINHUA in English 0713 GMT 17 Dec 80

[Text] Beijing, December 17 (XINHUA)--China has now caught up with the United States and Japan in forecasting the track of typhoons in terms of accuracy, thanks to the intensified efforts made in the past several years, said Dong Keqin, associate professor of the Chinese Academy of Meteorological Science.

The forecasting methods used include the steering method, the dynamic statistics method and the similarity statistics method, he said.

The steering method he suggested in 1965 has been used by the Hong Kong Royal Observatory since 1975.

But, Dong Keqin noted, the methods will be inefficient if the track of a typhoon is complicated. "We have carried out studies on this," he said. "The upper level cold vortex has an impact on the track."

Besides, he said, the topographic influence on the typhoon track has also been studied. It is found that when a typhoon approaches an island, it deviates to the left, and when it leaves the island, it deviates to the right. Hence a somewhat S-type track instead of a straight one, he said.

On August 4, 1975, Dong Keqin recalled, typhoon "Nina" landed in southeast China's Fujian Province and drove inward as far as central China's Henan Province, causing a rare heavy rain in the areas. Research efforts followed and it has been found that one of the major factors was the interaction between the tropical system and the temperate system. Besides, he added, the lower level (around 1,500 meters high) jets have much to do with the heavy rain.

Dong Keqin said that research efforts also suggested that the middle and lower level (averaging 1,500 to 3,000 meters high) jets have strong impacts on the occurrence and development of typhoons. The cross-equator currents' influence was also noted, he said.

Chinese meteorologists define typhoon as a tropical cyclone with the strongest wind near its center exceeding fresh gale force. When the wind reaches the maximum hurricane force, it is called a violent typhoon.

Typhoons that affect China start in the Western Pacific and the South China Sea, where an average of 29 typhoons are formed annually, the highest number being 40 and the lowest 20. China is directly hit by seven typhoons a year on the average, usually from May to November. The peak season is July-September, Dong Keqin noted. The violent rainstorm accompanying a typhoon brings danger or loss to the people and their property as well as to production and construction. But, he pointed out, it sometimes means much needed relief from drought.

CSO: 4020

BRIEFS

TREE CUTTING BAN--Beijing, Dec 6 (XINHUA)--Excessive felling of trees for any purpose has been banned by the Chinese Government in an urgent circular published in today's "PEOPLE'S DAILY." Indiscriminate felling of trees in many places has done serious damage to existing forest resources and effective measures must be taken immediately to stop it, the circular says. It asks the people's government at all levels to check up on the implementation of timber production plans and to stop above-quota production. The circular says that selling of timber products in the forest areas is placed under the unified management of the forest departments. No other organizations or individuals are allowed to fell trees or purchase timber products in the forest areas. All free markets for timber products in these areas are closed. All state timber production units must produce according to state quotas and the collectively-owned units must get permission from the county government before they begin felling trees. The railways and other communication departments will not ship any timber products without certificates issued by forestry administrations. Anyone who destroys forests or injures or kills forest guards will be severely punished according to law. [Text] [OW060847 Beijing XINHUA in English 0711 GMT 6 Dec 80]

PLANT PROTECTION--Kunming, Dec 10 (XINHUA)--Chinese agronomists and botanists have called on the government to set up special zones for the protection of valuable plant resources which, they say, are being depleted by farmers' concentration on high-yield strains. At a meeting in Kunming, capital of Yunnan Province, agricultural scientists said that although farmers concentrate on specialized and high-yield strains, the wild strains should not be neglected because they also have special qualities that give them a potential value as crops and for research work. They cautioned that developments such as land reclamation and water conservancy and construction projects have caused heavy losses of wild plants and some strains had disappeared. An earlier report said that 2,500 agronomists and 40,000 peasants had, under a state program, collected 29,000 indigenous strains of food and industrial crops throughout China since 1978. Among the plants collected in the past two years are 2,000 kinds of rice and soybeans, heavy-fruiting gooseberries, corn and potatoes which are hardy and resistant to disease. [Text] [OW100749 Beijing XINHUA in English 0730 GMT 10 Dec 80]

COTTON PLAN OVERFULFILLED--Beijing, Dec 18 (XINHUA)--China had by December 10 purchased from the peasants 2.205 million tons of ginned cotton, 367,500 tons more than in the same period of last year, thus overfulfilling its 1980 purchase target. Areas south of the Yangtze River suffered a failure of cotton crop this year, due to adverse weather. But harvest in areas north of the Yangtze River was so good

that it purchased 690,000 tons more than in the same period of last year. [Text] [OW210518 Beijing XINHUA in English 0700 GMT 18 Dec 80]

CADRE TRAINING COURSE--Beijing, Dec 25 (XINHUA)--A training course, designed to acquaint China's leading agricultural officials with the most modern farming techniques in the world, sponsored by the State Agricultural Commission and the organization department of the Central Committee of the Communist Party of China, closed here today. Attending the course were 46 trainees from all provinces, municipalities and autonomous regions and national-level agricultural departments. All were leaders in charge of agriculture at the provincial and ministerial levels. The course, which opened on November 11, included lectures on China's agricultural modernization, basic agro-science and agro-economic policies. The lecturers were He Kang, vice-minister of the State Agricultural Commission, and some noted Chinese agricultural professors. Trainees were briefed on advanced agriculture both in China and abroad. They saw films and slide presentations about agriculture, forestry, animal husbandry and water conservation in Australia, Japan and the United States. Such training courses are part of China's effort to make leading officials more knowledgeable. A leading official of the State Agricultural Commission said that a second course will begin in March 1981. Li Zhen, secretary of the Shandong Provincial Party Committee, said that he considered the course just a beginning. He said he hopes all leading cadres in his province can go through comparable courses. An agricultural training course for secretaries in prefectures and cities of Shandong Province and for directors of agricultural bureaus is due to begin next January. [Text] [OW251240 Beijing XINHUA in English 1231 GMT 25 Dec 80]

NATIONAL CONFERENCE IN FUJIAN--The National Conference on Varieties of Sweet Potatoes was held from 2 to 6 December in Longyan Prefecture in Fujian. Attending the conference were 36 representatives of 24 agricultural science colleges from various parts of the country. The representatives exchanged experiences on sweet potato cultivation and its varieties at the conference. [Fuzhou Fujian Provincial Service in Mandarin 1035 GMT 8 Dec 80]

COTTON PROCUREMENT--According to "Cai Mao Zhan Xian," a new record in cotton procurement has been set in 1980. As of 25 December, 47.63 million dan of ginned cotton had been procured, 8.3 percent more than the 1980 procurement plan and an increase of 8.89 million dan over the amount procured in the corresponding period last year or 50,000 dan over that in 1973, the previous peak year. [Text] [Beijing Domestic Service in Mandarin 2230 GMT 29 Dec 80]

COLD STORAGE IN 1980--Beijing, Jan 3 (XINHUA)--China built more than 120 commercial cold stores throughout the country last year with a combined capacity of 150,000 tons. The stores, geared to the growth of China's stock-raising program and egg supply, received priority allocations of workers and materials in many provinces. [Text] [Beijing XINHUA in English 1217 GMT 3 Jan 81]

CSO: 4020

BRIEFS

COTTON PROCUREMENT--Anhui's Susong County has reaped a bumper harvest of cotton from its 117,000 mu of cotton field and has procured 81,500 dan of ginned cotton, thereby fulfilling the annual procurement task. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 9 Dec 80]

COUNTY PROCUREMENT--Anhui's Guoyang County has fulfilled its annual procurement tasks for grain, edible oil and cotton. As of 2 December, some 138.5 million jin of grain, some 3.13 million jin of edible oil and some 4.89 million jin of cotton had been delivered to the state warehouses. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 9 Dec 80]

COTTON PROCUREMENTS-As of 28 November, Anhui's Jieshou County had delivered 1.8 million jin of cotton to the state warehouses reaped from its 43,790 mu of cotton field. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 9 Dec 80]

GRAIN OUTPUT--Total grain output of Anhui's Changfeng County reached 625 million jin this year. Higher output of oil-bearing crops and cotton and rapid development of forestry, animal husbandry, sideline production and fishery have also been reported in Changfeng County this year. Per capita income reached 105 yuan, doubling that of 1979. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 12 Dec 80]

FISHERIES' PRODUCTION--The establishment of the system of responsibility in production and improvement of management has aroused the enthusiasm for fish raising among the rural masses of Anhui's Chuxian Prefecture. Water surface for fish raising has by now expanded to some 700,000 mu. The prefecture had produced 12.4 million jin by late October. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 12 Dec 80]

COTTON OUTPUT--Hefei, 13 Dec (XINHUA)--This year, Si County, Anhui, reaped a bumper harvest from its 70,000 mu cotton fields. Total ginned cotton output reached 4.9 million jin, topping last year by 117 percent. [Beijing XINHUA Domestic Service in Chinese 0236 GMT 13 Dec 80]

AGRICULTURE HARVESTS--Luan Prefecture, Anhui, reaped good harvests of industrial crops this year. They include 1,144,000 dan of oil-bearing crops, 32.3 percent above 1979 production; 165,000 dan of cotton, 36.1 percent above 1979 production; 1.25 million dan of bast fiber crops, 26.53 percent more than 1979 output; 99,750 dan of tea, 2.4 percent more than 1979 output; and 22,000 dan of silk cocoon, 19.4 percent increase as compared with 1979. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 13 Dec 80]

RAMIE PRODUCTION--Anhui Province had a good harvest of ramie this year. As of 20 December, the department concerned had purchased 43,000 dan of ramie from the province, already overfulfilling the annual purchase quota by 6 percent and exceeding the record for the same period of last year by some 6,000 dan. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 25 Dec 80]

AFFORESTATION MEETING--On the eve of new year's day, the Anhui Provincial CYL Committee and the Provincial Forestry Department held in Hefei a meeting to commend the young afforestation activists and call on young people in Anhui to do a still better job in afforestation this winter and next spring. According to incomplete statistics, young people in 8 prefectures and municipalities in Anhui have afforested 310,000 mu of land and trees along 3,920 roads and 1,790 streams and ditches since 1979. Present at the meeting were Wang Guangyu Ang Lan Ganting, secretary and deputy secretary of the Anhui Provincial Party Committee; Ma Changyan, vice chairman of the standing committee of the Provincial People's Congress; and (Weng Qing), acting secretary of the Provincial CYL Committee. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 1 Jan 81]

CSO: 4007

BRIEFS

FOREST BELTS--Beijing, 25 Dec (XINHUA)--Beijing has planted 128 major forest belts and 93 minor ones as part of the effort to improve climatic and environmental conditions and control the sandstorms that can turn the capital dusty grey during the winter-spring season. The windbreak belts, totalling 240 kilometers in length with 1.2 million trees, were built at Kangzhuang and Nankou in the northwest of the city, the two major mountain gaps which allow gale-force winds blowing over barren land and dry river beds to encrust the city with sand and occasionally brown out the sun. The complete network of windbreaks should be completed in 3 or 4 years, according to an official of the city's agriculture and forest bureau. [Beijing XINHUA in English 0743 GMT 25 Dec 80]

MEAT, EGGS--Beijing, 28 Dec (XINHUA)--Beijing Municipality overfulfilled the 1980 state purchase quotas for pigs, eggs, milk and fish by the end of November 1980. Statistics follow: over 2 million pigs purchased, 4,000 over the quota and 10,000 over the 1979 figures; 46 million jin of eggs, 1.35 million over the quota and 7.2 percent over the 1979 record; 123 million jin of milk and 5.9 million jin of fish, respectively 6.1 percent and 31 percent over the quotas. All these purchase figures are all-time highs. [OW011940 Beijing XINHUA Domestic Service in Chinese 0159 GMT 28 Dec 80]

CSO: 4007

PRC CLEARS UNDERWATER OBSTACLES NEAR NIUSHAN

OW251230 Beijing XINHUA in English 1221 GMT 25 Dec 80

[Text] Beijing, December 25 (XINHUA)--The project of clearing underwater obstacles in a fishing ground near the Niushan Island has been completed after more than 400 days of operation in three years' time, announced a spokesman of the Ministry of Communications here today.

The biggest obstacle underwater in the area was the sunken Japanese vessel "Awa-Maru." So far, over 300 skeletons of the dead and more than 600 pieces of personal belongings retrieved from the ship before January 1980 have already been transferred to the Japanese Government. Those salvaged this year will soon be turned over to the Japanese Government.

In addition, tin ingots, lead ingots, rubber, mica and mercury have also been recovered. No other precious objects have been found on the ship.

Off the coast of Pingtan County, east China's Fujian Province, the Niushan Island fishing area abounds in aquatic resources and is an important production centre for the local fishermen who have long hoped to see the underwater obstacles cleared.

Clearing was started in 1977 by the China Ship Wreck Rescue and Salvage Bureau with the help of a naval rescue unit of the Chinese People's Liberation Army. They first dealt with obstacles entangling fishing nets, and recovered some wreckages of the ship and other miscellaneous articles, including tin ingots and wooden boards with names of people. Repeated studies and check-ups confirmed that this was the Japanese ship "Awa-Maru," which was sunk there towards the end of World War Two.

During the salvage work, the workers and armymen surmounted one difficulty after another, and the divers worked for a total of 6,100 hours in the water. The stem of the ship was hoisted in July this year.

Bearing in mind the friendship between the Chinese and Japanese people and humanitarianism, the salvage workers paid close attention to collecting the belongings of the dead.

CSO: 4020

BRIEFS

AGRICULTURAL PRODUCTION--The province has reaped a bumper agricultural harvest this year. Total grain production increased slightly although the sown area this year was reduced by 920,000 mu over last year. Sugarcane, tea and fruit production also increased. Fujian Province reaped a bumper agricultural harvest this year because the province proceeded from its local conditions to speed up production despite unfavorable weather. The Provincial CCP Committee and the Provincial People's Government have implemented the principles of taking grain production as the key stressing overall development, and acting in accordance with local conditions with appropriate concentrations. All areas also did well in promoting diversification. [Fuzhou Fujian Provincial in Mandarin 1035 GMT 3 Dec 80]

WATER CONSERVANCY MEETING--Fujian Province decided at the recent provincial meeting on water conservancy work not to build new water conservancy projects next year. The meeting also decided to speed up production of complete sets of water conservancy equipment and rapidly finish incomplete projects. According to statistics, if all projects under construction are completed, the province's total irrigated area will be increased by 1.09 million mu. Therefore, the meeting urged rapid completion of these projects instead of undertaking new projects. [Fuzhou Fujian Provincial Service in Mandarin 1035 GMT 13 Dec 80]

SUGARCANE ACREAGE--Fuzhou, 19 Dec (XINHUA)--Acreage sown to sugarcane reached some 700,000 mu in Fujian Province this year, an increase of 13 percent over 1979. Total output is estimated to be 510,000 dan, or 11 percent higher than last year. The province has by now produced 2.58 million dan of litchis, bananas, loquats and tangerines, an increase of more than 4 percent over 1979. [OW271141 Beijing XINHUA Domestic Service in Chinese 0122 GMT 19 Dec 80]

AGRICULTURAL PRODUCTION--Fuzhou, 14 Dec (XINHUA)--Longhai County, Fujian, in 1980 sold more than 180 million jin of grain to the state. The county's 1980 grain production increased by 20 million jin as compared with 1979. [Beijing XINHUA Domestic Service in Chinese 0330 GMT 14 Dec 80]

CSO: 4007

BRIEFS

EDIBLE-OIL CROPS--Lanzhou, 26 Dec (XINHUA)--Gansu Province has reaped a bumper harvest of edible-oil crops this year with a total yield of 200 million jin. As of the end of November, the province had procured 13.75 million jin of oil, surpassing last year's procurement by a big margin. [Beijing XINHUA Domestic Service in Chinese 0151 GMT 26 Dec 80]

GRAIN PRODUCTION--Compared with 1979, Zhangye County in Gansu increased its grain output by 63 million jin and its marketable grain sold to the state by 10 million jin in 1980. [Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 1 Jan 81]

BEET PRODUCTION--In 1980 Gansu Province procured 50,022 tons of beets, increasing the amount by 101 percent compared with 1979. [Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 1 Jan 81]

CSO: 4007

BRIEFS

AGRICULTURAL HARVESTS--Guangzhou, 10 Dec (XINHUA)--Guangdong Province this year reaped an all-around good agricultural harvest. This year's grain output increased by 1.11 billion jin as compared with last year. The production of major industrial crops also increased. More than 7 million dun of sugarcane has been delivered to sugar mills, and more than 10 million dan of peanuts have been gathered. The province this year yielded more soybeans, silk cocoons, fruit and aquatic products than last year. Of the rice crops grown in the province, 11 million mu are of good strain. [Beijing XINHUA Domestic Service in Chinese 0146 GMT 10 Dec 80]

SUGAR PROCUREMENT CIRCULAR--The Guangdong Provincial People's Government recently issued an urgent circular, demanding that all localities fulfill state quotas for procurement of sugar, the circular points out that since the beginning of this refining season, production of sugar has been good but the quotas for the procurement of sugar have not been fulfilled well. The circular demands that governments at all levels and communes in the sugar-producing areas immediately organize departments concerned to inspect sugar production and the implementation of the policy on procurement of sugar and to immediately prohibit the actions which violate the policy. [Guangzhou Guangdong Provincial Service in Mandarin 2345 GMT 27 Dec 80]

HAINAN CATTLE-BREEDING--Guangzhou, 11 Dec (XINHUA)--Hainan Island, Guangdong, is raising more than 700,000 head of cattle in 1980, increasing by some 25,000 head as compared with 1979. [Beijing XINHUA Domestic Service in Chinese 0114 GMT 11 Dec 80]

FARM PRODUCE--Guangzhou, 16 Dec (XINHUA)--Foshan Prefecture, Guangdong, this year registered a 1,130-jin per mu output of grain with the total grain output topping last year's figures by about 10 percent. In addition to fulfilling 1.8 billion-jin 1980 state grain purchase quota, it will also sell over 1 billion jin of surplus grain to the state at a negotiated price. Meanwhile, Foshan's sugarcane output in 1980 is 22.7 percent over 1979 while increases were also registered in the output of peanuts and cocoons. [Beijing XINHUA Domestic Service in Chinese 0244 GMT 16 Dec 80]

CSO: 4007

BRIEFS

PIG PROCUREMENT--The Guangxi Regional People's Government held a telephone conference on the evening of 23 December, demanding that all areas do a good job of pig procurement and pork supply during the spring festival. Ren Gengqing, the Regional People's government vice chairman, spoke at the conference. He said: It is necessary to seriously implement the Regional CCP Committee's and Regional People's Government's circular on pig rearing and on readjusting the present policy on pig procurement. Pork must be sold at fixed prices during the spring festival and we must strictly forbide units from raising the prices of pork on their own accord. [Nanning Guangxi Regional Service in Mandarin 1130 GMT 24 Dec 80]

GRAIN HARVEST--Guangxi Region has fought a good battle against natural disasters and reaped a bumper agricultural harvest. The sown area of grain was reduced by some 2 million mu this year. Nevertheless, grain production was still increased by 100 million jin. Production of other products such as sugar cane, potatoes, bean, rapeseed and fruit was also increased. Guangxi Region has encouraged scientific cultivation to makeup for the deficits brought about by various natural disasters. [Nanning Guangxi Regional Service in Mandarin 1130 GMT 26 Dec 80]

CSO: 4007

BRIEFS

EDIBLE OIL--According to a GUIZHOU RIBAO report, the Guizhou provincial grain department issued a circular on 10 December permitting people to use grain ration coupons in exchange for edible oil. The circular stipulated: 1) people can receive 1 jin of edible oil in exchange for grain ration coupons bearing 6 jin of grain, and 2) edible oil will be sold at a unified price, proportionate to grain, if no grain coupons are produced. The provincial grain department demanded that all areas carry out inspections to see that the circular's instructions are being properly implemented. [Guiyang Guizhou Provincial Service in Mandarin 2315 GMT 12 Dec 80]

AGRICULTURAL PRODUCTION--Guiyang, 17 Dec (XINHUA)--Guizhou is reaping a bumper harvest in agriculture this year. Total grain output is expected to exceed 12.6 billion jin, an increase of 700 million jin over last year. Rapeseed output has set an all-time record this year. To date over 268 million jin of rapeseed has been sent to warehouses. [OW271325 Beijing XINHUA Domestic Service in Chinese 0128 GMT 17 Dec 80]

COUNTY PROSPERITY--In 1980, 32 backward counties in Guizhou have increased their grain output and the commune members' income. For 3 years in succession, there were 43 counties in which the average income of the commune members from distribution was less than 50 yuan. This accounted for 19.6 percent of the total number of backward counties throughout the country. Now, the problems of food and clothing in these 32 counties have been solved. [Guiyang Guizhou Provincial Service in Mandarin 2315 GMT 19 Dec 80]

AGRICULTURAL, SIDELINE PRODUCTION--According to a GUIZHOU RIBAO report, by mid-November, Guizhou Province had already fulfilled procurement of agricultural and sideline products which amounted to 212.46 million yuan, overfulfilling the year's state quota by 1 percent. [Guiyang Guizhou Provincial Service in Mandarin 2315 GMT 23 Dec 80]

CSO: 4007

BRIEFS

ANIMAL RAISING--Despite natural disasters, Hebei's Guyuan County has raised more cattle, mule, horse, sheep and pig this year than 1979. Since 1978, the county has built some 88,000 mu of grassland for animal raising. More than 200 million jin of fodder grass have been stored for winter. [Beijing Domestic Service in Mandarin 1000 GMT 15 Dec 80]

OIL-BEARING CROPS--Shijiazhuang, 3 Dec (XINHUA)--Hebei Province has gathered in rich harvests of peanuts, sunflower seeds and sesame, known as the three major oil-bearing crops. The total peanut yield amounted to 554 million jin, increasing 204 percent compared with 1979; the total output of sunflower seeds was 70 million jin, 7 times last year's figure; and the total sesame yield reached 39.23 million jin, topping last year's figure by 12.9 percent. [OW050159 Beijing XINHUA Domestic Service in Chinese 0157 GMT 3 Dec 80]

GRAIN PROCUREMENT--By 9 December, the entire Hebei Province had overfulfilled its year's procurement quota of 2.8 billion jin. The province could still reap a bumper grain harvest this year despite unfavorable weather because various production responsibility systems had been implemented. [HK251414 Shijiazhuang Hebei Provincial Service in Mandarin 0430 GMT 13 Dec 80]

CSO: 4007

BRIEFS

AGRICULTURAL PRODUCTION--Hejiang Prefecture, Heilongjiang Province, set records in agricultural production, agricultural earnings and commune members' distribution this year. Its grain output is estimated to be 3.2 billion jin this year. Its cash crop output value will be three times that of 1979. Its costs of producing 1 jin of grain declined from 62 li in 1979 to 5 fen. Its agricultural earnings will total 620 million yuan. Each commune member will be distributed 130 yuan. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 29 Dec 80]

AGRICULTURAL OUTPUT--Suifenhe Municipality, Heilongjiang Province reaped a bumper agricultural harvest in 1980. Compared to that of 1979, the grain output increased 1.6 times, marketable grain handed over to the state 10 times and draught animals 1.2 times. The 1980 grain output of this municipality is expected to be some 7 million jin, an increase of some 1.3 million jin over the highest figure in 1975. The agriclutural income is expected to be some 2.2 million yuan, an increase of some 400,000 yuan over the 1975 figure. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 30 Dec 80]

FESTIVAL RATIONS--Harbin Municipal Grain Bureau decided to supply extra grain and edible oil rations to urban residents during the spring festival period, including February. Beginning 10 January all urban residents, neighboring vegetable-growing peasants and non-agricultural persons in the suburban areas will have an extra per capita supply of 12 jin of standard flour, 2 jin of refined flour, 2 jin of second-grade rice and 1 jin of miscellaneous beans. During the spring festival period, rural and urban non-agricultural persons, will have an extra per capita supply of 1 jin of corn oil or sunflower seed oil and 1 jin of peanuts and 1 jin of sunflower seeds. Each household will have 1/2 jin of sesame oil. Production teams in the suburban areas which do not grow wheat, are entitled to exchange 3 jin of standard flour per capita for their coarse and miscellaneous grains. [Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 2 Jan 81]

MARKETABLE GRAIN--As of the end of 1980, reclamation areas in Heilongjiang Province handed over to the state some 3.06 billion jin of marketable grain. Another 390 million jin is in the process of being transported to the state grain depot. In 1980, these areas handed over some 3.45 billion jin of marketable grain to the state, an increase of 22.3 percent over that of the 1979 and a record high since the founding of the people's republic. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 3 Jan 81]

CSO: 4007

BRIEFS

GRAIN PROCUREMENT EXEMPTION--Recently, a total of 350 million jin of grain was exempted from procurement tasks throughout the province because of losses worth 39.8 million yuan caused by disasters. This is an average reduction of 246 yuan for each disaster-affected production team. The Hubei Finance Revenue Bureau stipulated that areas affected by disasters in the countryside must be exempted from paying the agricultural tax. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 21 Dec 80]

CSO: 4007

BRIEFS

GOOD COTTON HARVEST--According to statistics of the departments concerned, Hunan Province's total output of cotton for this year is 1.8528 million dan, which is near the level of last year's bumper harvest. By 25 November, the province had procured some 1.4124 million dan of cotton, some 14,800 dan more than in the corresponding period of last year. On the basis of the increase of the price of cotton last year, the state has again raised the cotton procurement price by 10 percent this year and has continued to implement the policy that the cotton procurement price will be raised by 30 percent after the fulfillment of the quota for cotton procurement, thus mobilizing the commune members' enthusiasm for cotton production. [Changsha Hunan Provincial Service in Mandarin 1100 GMT 15 Dec 80]

CSO: 4007

BRIEFS

COTTON HARVEST--Guannan County, Jiangsu Province, has reaped a bumper harvest from its 50,000 mu of cotton fields. The total yield amounts to some 40,000 dan, twice as much as last year. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 7 Dec 80]

COTTON PRODUCTION--The masses in Xuzhou Prefecture, Jiangsu Province, reaped a bumper harvest of cotton from 700,000 mu sown to the crop. Total output reached 790,000 dan, nearly double that of last year. The average per-mu yield of cotton exceeded 100 jin. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 8 Dec 80]

BUMPER HARVEST--Nanjing, 9 Dec (XINHUA)--Xuzhou Prefecture in Jiangsu gathered in a rich harvest this year despite serious natural disasters such as waterlogging, low temperatures and pests. The total grain yield amounted to 6.5 billion jin, showing a 5 percent increase compared with last year. The total cotton output reached some 790,000 dan, doubling last year's figure. In addition, the prefecture has also reaped 192 million jin of oil-bearing crops, 28 percent more than last year's record. As of the end of November, the prefecture had delivered some 1.1 billion jin of grain to the state, and it is expected to deliver 1.3 billion jin for the whole year. As of the end of October, it had also procured 930,000 hogs, some 290,000 head more than last year's figure. This year, each commune member is expected to receive 10 yuan more than last year in distribution. [Beijing XINHUA Domestic Service in Chinese 0343 GMT 9 Dec 80]

AGRICULTURAL HARVESTS--Despite serious natural disasters, Xuzhou Prefecture in Jiangsu has reaped an all-round bumper harvests of agriculture this year. The total output of grain has increased 5 percent, cotton increased 100 percent and oil-bearing crops increased 28 percent over last year. By the end of November, some 1.1 billion jin of grain had been sold to the state. By the end of October, the prefecture had procured 290,000 head of hogs more than last year's same period. [Nanjing Jiangsu Domestic Service in Mandarin 2300 GMT 9 Dec 80]

AUTUMN HARVEST--Guanyun County, Jiangsu, has reaped an all-round bumper harvest of autumn crops this year. The total grain output is 30 million jin more than last year. The output of oil-bearing crops is 10 million jin and of cotton is 80,000 dan more than last year. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 14 Dec 80]

MARKETABLE GRAIN--As of 2 December, Donghai County in Jiangsu had already sold 260 million jin of marketable grain to the state, overfulfilling the quota by 500,000 jin. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 14 Dec 80]

WINTER CROPS--By early December some 36 million mu of wheat, barley and naked barley and 4.3 million mu of rape were planted in various parts of Jiangsu Province. The province has also planted some 13.5 million mu of green manure. Young sprouts are now growing promisingly in most localities. But slow progress and poor quality has been reported in field management. According to weather forecasts, this winter is going to be cold with less rainfall and snowfall than normally. All localities have been urged to step up field management to protect the young sprouts from cold weather this winter. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 18 Dec 80]

AQUATIC PRODUCTS--This year, Jiangsu Province has reaped 200,000 dun of seawater and freshwater products each with the total yield exceeding 400,000 dun for the first time in history. [Nanjing Jiangsu Provincial Service in Mandarin 2300 GMT 28 Dec 80]

CSO: 4007

BRIEFS

JUTE, HEMP PRODUCTION--According to a JIANGXI RIBAO report, Jiangxi Province has reaped a bumper harvest in jute and ambary hemp. By mid-November, the provincial supply and marketing departments had already procured 250,000 dan of jute and hemp, overfulfilling the procurement quota by 3,800 dan and showing an increase of some 50,000 dan over the same period last year. Communes and brigades have implemented new production responsibility systems in order to increase jute and hemp production, and activism of the peasants was greatly encouraged. In addition to production responsibility systems, the communes and brigades also conducted training classes for the peasants to increase their level of scientific cultivation. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 4 Dec 80]

WATER CONSERVANCY PROJECTS--Jiangxi Province has launched farmland and water conservancy capital construction in winter. Up to the beginning of December, some 1 million laborers had participated in the province's farmland and water conservancy capital construction and 4,700 projects were completed. All areas have worked hard to promote farmland and water conservancy capital construction after fulfilling their autumn harvest and winter sowing. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 10 Dec 80]

GRAIN INSPECTION--Jiangxi provincial grain department has set up an inspection group, which, led by (Wei Zhenfang), has gone to prefectures, including Ganzhou and Yichun, to conduct large-scale inspection of the grain prices. Meanwhile, the provincial grain department has issued an urgent circular, demanding that grain departments at all levels seriously study state council's 7 December circular on resolutely prohibiting raising prices indiscriminately and in disguised ways and inspect the situation of implementing the policy on prices. Grain and oil which do not meet the standard's are not allowed to be displayed for sale. Factories, granaries and grain stores must put the inspection system on a sound basis. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 14 Dec 80]

WATER CONSERVANCY CONFERENCE--The Jiangxi Provincial People's Government held a telephone conference on the evening of 14 December urging the entire province to promote farmland water conservancy work. Wang Zhaorong, the provincial vice governor, presided over the conference and Zhang Guozhen, provincial vice governor, spoke at the telephone conference. He said: Since we have basically finished autumn harvest and winter sowing tasks this year, and the weather is relatively dry, it is the right time for us to repair water conservancy projects. We must work hard to do well in farmland capital construction this year in order to prepare for a bumper agricultural harvest next year. Therefore, the provincial people's government demanded that all areas rectify farmland capital construction and speed up completion of key projects. Local areas should also implement contract systems to stimulate completion of projects. In conclusion, water conservancy departments at all levels must attach importance and strengthen leadership over this work. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 15 Dec 80]

CSO: 4007

BRIEFS

GRAIN PROCUREMENT--Lishu County, Jilin Province, has handed over to the state 410 million jin of grain as of 25 December, overfulfilling the 1980 state procurement plan. [SK281032 Changchun Jilin Provincial Service in Mandarin 1100 GMT 26 Dec 80]

GRAIN PROCUREMENTS-Shuangliao County, Jilin Province, has handed over some 40,000 tons of grain to the state. It also overfulfilled the 1980 paddy rice procurement plan. Two of its communes overfulfilled the annual soybean procurement plan by 100 percent. [SK281032 Changchun Jilin Provincial Service in Mandarin 1100 GMT 26 Dec 80]

AGRICULTURE PRODUCTION--This year Lishu County, Jilin Province, has increased its grain and soybean yield by 13 percent over that of 1979. Some 500 million jin of marketable grain have been sold to the state. Average per capita income has increased from 123 yuan in 1979 to 150 yuan. The average per capita grain ration is 700 jin. [Changchun Jilin Provincial Service in Mandarin 1100 GMT 27 Dec 80]

ANIMAL HUSBANDRY--Shuangliao County, Jilin Province, now has 25,000 head of cattle and 55,500 head of sheep, an increase of 19.5 percent and 11.1 percent, respectively. The number of cattle raised privately by commune members increased from 1,363 in 1979 to 2,749 in 1980. Sheep increased from 5,444 in 1979 to 15,000 this year. [Changchun Jilin Provincial Service in Mandarin 2200 GMT 29 Dec 80]

AGRICULTURAL OUTPUT--Nongan County, Jilin Province, reaped a bumper agricultural harvest over its 4.3 million mu of arable land last year. Its total beets output reached 370,000 ton, doubling the 1979 figure. The total output of its oil-bearing crops reached 50,000 ton, a 60 percent increase over that of 1979. Its total millet output registered more than 270 million jin, a 40 percent increase over that of 1979. As a result, the county scored an annual agricultural income of 230 million yuan last year, surpassing the 1979 figure by more than 40 million yuan. Its per capita income reached more than 140 yuan. [Changchun Jilin Provincial Service in Mandarin 2200 GMT 3 Jan 81]

GRAIN PRODUCTION--Changchun, 11 Dec (XINHUA)--Lishu County, Jilin, produced 910 million jin of grain in 1978 and increased its grain output by 13 percent in 1979 as compared with 1978. Its 1980 grain output is 10 percent more than that of 1979. [Beijing XINHUA Domestic Service in Chinese 0228 GMT 11 Dec 80]

CSO: 4007

BRIEFS

HARVEST RESULTS--Despite serious droughts, Shenyang Municipality, Liaoning Province, had good harvests in agricultural, forestry, livestock and sideline production this year. The eight economic indexes including total grain output, the amount of marketable grain handed over to the state, the number of milk cows and sheep, the amount of milk marketed during the year, the amount of freshwater fish, the total output value of commune and brigade-run enterprises and the per capital income of commune members set records. The city's total grain output this year was 3,003.37 million jin. Marketable grain handed over to the state totaled 1,190 million jin. Per capita income of commune members was 160 yuan. [Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 25 Dec 80]

AGRICULTURAL PROCUREMENT--Liaoning Province has overfulfilled the state procurement plan for agricultural and sideline products. As of the end of November, the total procurement value was 467.86 million yuan, an increase of 11 million yuan over that of 1979. [SK281009 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 26 Dec 80]

EDIBLE OIL RATION--Shenyang, 28 Dec (XINHUA)--The Liaoning Provincial People's Government has recently decided to restore the 5-ounce monthly edible-oil ration for the nonagricultural population in urban and rural areas throughout the province, beginning 1 January 1981. This monthly ration was cut back from 5 ounces to 3 ounces in 1968. Liaoning this year planted 2,667,000 mu of sunflowers and 1.43 million mu of peanuts, respectively 1.38 million mu and 200,000 mu more than in the last year. The state purchased 246 million jin of sunflower seed and 105 million jin of peanuts this year, both record highs in 20 years. [OW011940 Beijing XINHUA Domestic Service in Chinese 0209 GMT 28 Dec 80]

MARKETABLE GRAIN--Haicheng County, Liaoning Province, marketed some 329 million jin of surplus grain to the state in 1980. As of 16 December, this county had handed over to the state some 440 million jin of marketable grain, an increase of 100 million jin over the 1979 figure. The total grain output of this county was 1.75 billion jin in 1980, an increase of some 110 million jin over 1979. [SK301322 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 29 Dec 80]

COUNTY HARVESTS--Shenyang, 29 Dec (XINHUA)--Haicheng County, Liaoning Province, harvested 1.079 million jin of grain and beans in 1980, topping the 1979 record by 11 percent and breaking the 1-billion jin mark for the first time in history. The county provided the state with 430 million jin of commercial grain, 24 percent over the 1979 figures and 360 percent of the state fixed quota. The total output

value of the county's commune- and production-run enterprises was 177 million yuan by the end of October which was 21 percent of the same period of 1979. The average per capita cash income for commune members was 135 yuan, 14 yuan more than in 1979. This figure may go as high as 230 yuan if their sideline production income is included. By the end of October 1980, people's savings deposits in urban and rural areas totaled 43.2 million yuan, 70 percent over the same period of 1979. [OW021023 Beijing XINHUA Domestic Service in Chinese 1414 GMT 29 Dec 80]

COUNTY GRAIN OUTPUT--The total grain output of Xinbin County, Liaoning Province, was 100 million jin in 1980, an increase of some 10 million jin over the 1979 figure. The output of oil-bearing crops totaled 51 million jin, 30 million jin more than the 1979 figure. [Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 3 Jan 81]

GRAIN, COTTON OUTPUT--Jianchang County, Liaoning Province, had overfulfilled the 1980 state grain and cotton procurement plans by 66 percent and 100 percent, respectively. The grain output totaled 350 million jin, an increase of 15 million jin over the 1979 figure. The output of cotton stood at 42,000 dan, overfulfilling the 1979 figure by 15,200 dan. The per-unit area yield of ginned cotton was some 90 jin, the highest figure ever achieved in this county. [Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 4 Jan 81]

CSO: 4007

BRIEFS

AFFORESTATION EFFORTS--Hohhot, 1 Dec (XINHUA)--This year, the people in Nei Monggol afforested more than 4.85 million mu of land and planted 78.59 million trees around houses and villages and at roadsides and beside rivers and lakes, thus overfulfilling the respective annual plans by 8.2 and 16.2 percent. [Beijing XINHUA Domestic Service in Chinese 0236 GMT 1 Dec 80]

GRAIN, OIL-BEARING SEEDS--By 1 December, Tongliao County, Nei Monggol, had delivered 102.36 million jin of grain to granaries, overfulfilling by 5 percent its annual plan. [SK100411 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 6 Dec 80] Nei Monggol's Ju Ud League has procured 53.24 million jin of oil-bearing seeds, and Hulun Buir League has procured 37.98 million jin. [SK100411 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 6 Dec 80]

COCOON PROCUREMENT--Horqin Youyi Qian Banner has procured 480,000 jin of silk cocoon to date. [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 7 Dec 80]

OIL-BEARING SEEDS--In Nei Monggol, fields sown to oil-bearing crops totaled 7.9 million mu, an increase of 26 percent over the 1979 figure. Total output of oil-bearing seeds is expected to be 500 million jin, 35 percent higher than in 1979. As of 10 December, the region had put 301.77 million jin of oil-bearing seeds in storage. [SK160640 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 14 Dec 80]

SUGARBEET PRODUCTION--Hohhot, 16 Dec (XINHUA)--Nei Monggol this year reaped 1,514 million jin of sugarbeet, 54.6 percent over last year's figures. Bayannur League, the largest sugarbeet producing area, earned a 32.56 million-yuan income on sugarbeet, averaging 95.1 yuan per agricultural worker. [Beijing XINHUA Domestic Service in Chinese 0110 GMT 16 Dec 80]

FODDER GRASS--Nei Monggol Autonomous Region has scored good achievements in using aircrafts to sow fodder grass. The region has sown 380,000 mu of fodder grass over the past 2 years and over 50 percent of the normally arid desert areas are now covered with vegetation. [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 16 Dec 80]

RAPESEED PROCUREMENT--Hohhot, 20 Dec (XINHUA)--According to Nei Monggol's food department, as of 10 December, the autonomous region had sold 301.77 million jin of oil-bearing products to the state, overfulfilling this year's requisition and procurement quota by 0.6 percent. This year Nei Monggol has 7.9 million mu of

oil-bearing crops, 26 percent more than last year, and the total output is nearly 20 percent higher than last year. [Excerpts] [OW290057 Beijing XINHUA Domestic Service in Chinese 0754 GMT 20 Dec 80]

LIVESTOCK PROCUREMENT--Commercial departments in Nei Monggol failed to fulfill the annual cattle and sheep procurement plans this year. Many communes and brigades sold livestock at negotiated prices before fulfilling the obligatory state procurement quotas. As of the end of November, the region fulfilled the annual cattle procurement plan by 80 percent and the annual sheep procurement plan by 94 percent. [SK232222 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 22 Dec 80]

LIVESTOCK TRANSFER--Pastoral areas in Nei Monggol transferred some 1.2 million head of livestock to farming areas and mountainous and old revolutionary base areas to help them develop animal husbandry. [SK232222 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 22 Dec 80]

GRAIN PRODUCTION--Despite serious droughts, low temperatures, windstorms, hailstorms and early frost, Jirem League in Nei Monggol reaped 1.75 billion jin of grain this year. By 15 December the league had overfulfilled its 1980 320 million jin procurement quota by 0.6 percent. [SK240347 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 23 Dec 80]

GRAIN PROCUREMENT--As of 21 December, Hohhot Municipality, Nei Monggol Region, had overfulfilled the annual 30 million-jin grain procurement task by 0.33 percent. A reexamination of the grain procurement policy is underway in the municipality. [SK281011 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 26 Dec 80]

OIL-BEARING CROPS--Hulun Buir League, Nei Monggol, had sold some 47.08 million jin of oil-bearing seeds to the state by 21 December, an increase of some 200 percent over the 1979 figure, overfulfilling the annual state plan by some 44 percent. [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 30 Dec 80]

GRAIN OUTPUT--By late December, Xingan League, Nei Monggol, had overfulfilled the 1980 grain procurement plan by 2 percent. The grain output totaled 700 million jin. This league also stored some 15.9 million jin of soybeans, doubling the 1979 figure. [SK051402 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 4 Jan 81]

CSO: 4007

BRIEFS

LIVESTOCK BREEDING--Yinchuan, 12 Dec (XINHUA)--Ningxia Hui Autonomous Region this year has taken action to increase fodder grass production and reduce the number of livestock to insure survival through the winter. Serious drought in Yanchi, Tongxin, Lingwu, Zhongwei and Haiyuan counties in central Ningxia have caused a drastic drop in fodder grass production there. To meet the fodder shortage, the autonomous region this year plans to reduce the number of sheep by 380,000 head. To date, 300,000 head of thin and weak sheep have been butchered or sold. Communes and production brigades in the drought-stricken areas are making efforts to gather and store more wild grass for livestock fodder in the winter. [Beijing XINHUA Domestic Service in Chinese 0302 GMT 12 Dec 80]

CSO: 4007

BRIEFS

GRASSLAND CONSERVATION--Qinghai Province did a better job in grassland water conservation construction in 1980 than in previous years. By the end of November 1980, the province had expanded or improved 1.49 million mu of grasslands, overfulfilling the annual plan by 49 percent. The province had expanded 28,000 mu of irrigated areas of artificial forage grass bases. [Xining Qinghai Provincial Service in Mandarin 2330 GMT 2 Jan 81]

SEED FARMS--In 1980 the grain and oil-bearing seed output of 23 state stock-seed farms totaled 5.2 million jin, an increase of some 10 percent over the 1979 figure. According to statistics, these state farms produced some 2.76 million jin of fine stock seed in 1980, about one-fifth more than in 1979. [SK051401 Xining Qinghai Provincial Service in Mandarin 2330 GMT 4 Jan 81]

CSO: 4007

BRIEFS

CIRCULAR ON WINTER IRRIGATION--On 25 December, the Shaanxi Provincial Antiflood and Antidrought Command issued an urgent circular, demanding that all localities step up winter irrigation. The circular says that since the beginning of winter, it has rained little in the province and the situation of drought in some prefectures has begun to appear. Some places have not done well in winter irrigation. The province's winter irrigated area is two-thirds less than in the corresponding period of last year. The circular calls on all places to step up winter irrigation. [HK310545 Xian Shaanxi Provincial Service in Mandarin 1100 GMT 26 Dec 80]

AFFORESTATION EFFORTS--Xian, 31 Dec (XINHUA)--Shaanxi Province in 1980 afforested 4,005,000 mu of land and cultivated 310,000 mu of saplings, respectively 21.3 percent and 3.3 percent over the 1980 plans. In addition, there were 250 percent more trees planted along roads and rivers and around houses and villages than in 1979. Over the past year and more, some 1.5 million mu of waste hills and sandy land have been distributed among commune members for planting fuel woods. So far, 420,000 mu of them have been planted to trees. [OW041619 Beijing XINHUA Domestic Service in Chinese 0134 GMT 31 Dec 80]

CSO: 4007

BRIEFS

WATER CONSERVANCY PROJECTS--The Provincial Water Conservancy and Power Office recently held a meeting of responsible persons in charge of water conservancy and power work in various localities to discuss ways to accelerate some hydroelectricity subsidiary projects. It is estimated that upon completion, these projects will provide an additional some 45 million kilowatts of power generating capacity. This accounts for a tenth of the total power generating capacity of all minor hydroelectric stations in Shandong Province. [Jinan Shandong Provincial Service in Mandarin 2300 GMT 25 Dec 80]

PREFECTURES' PRODUCTION--Heze, Liaocheng, Dezhou and Huimin Prefectures in Shandong Province, which were backward in production for a long time, have become more prosperous thanks to efforts to develop cotton production in line with local conditions. Among the 35 key cotton growing counties, each of which has more than 150,000 mu of cottonfields, 30 counties are located in these 4 prefectures. Per capita income in these four prefectures is 94 yuan this year as opposed to 51 yuan in 1979. [SK291323 Jinan Shandong Provincial Service in Mandarin 2300 GMT 27 Dec 80]

COUNTY GRAIN--Compared with 1979, Ningyang County, Shandong Province, increased its peanut, cotton and grain output by 8 million jin, 1.5 million jin and 20 million jin, respectively. [Jinan Shandong Provincial Service in Mandarin 2300 30 Dec 80]

TOBACCO PRODUCTION--Linyi Prefecture in Shandong Province reaped 770,000 dan of flue-cured tobacco from its 250,000 mu of flue-cured tobacco fields in 1980. This output was a record. [Jinan Shandong Provincial Service in Mandarin 2300 GMT 31 Dec 80]

COTTON OUTPUT--Jinan, 26 Dec (XINHUA)--China's new policy of allowing rural collectives to concentrate on production best suited to local conditions has worked wonders in Liaocheng Prefecture, Shandong Province, once classified by the state council as one of the 10 poorest agricultural areas in China. Under this new policy, the prefecture this year has expanded the area under cotton to 186,600 hectares, compared to less than 30,000 hectares during the cultural revolution (1966-76) when cotton production was restricted. After achieving the best harvest in local history, Liaocheng's rural population of 4.02 million is expected to draw an income of 100 to 150 yuan per capita from collective production--in contrast with a previous high of 48 yuan in 1973 and 24 yuan in 1961. According to the state statistical bureau, nationwide per capita income in rural people's communes derived from the collective economy averaged 83.4 yuan last year, and is expected to be somewhat higher this year. Liaocheng has this year harvested 160,000 tons of ginned cotton. The previous record harvest was 56,000 tons. [Beijing XINHUA in English 1227 GMT 26 Dec 80]

CSO: 4020

BRIEFS

AGRICULTURAL ZONING--The second Xinjiang Regional Conference on agricultural zoning and investigation of agricultural resources was recently held in Urumqi Municipality. The meeting pointed out that while trying to know the real farming conditions of Xinjiang, efforts should also be made to learn more about the resources of soil, river, grassland and forest in 1981. Meanwhile, all farming areas throughout the region must also map out plans to divide the cultivated land into different farming zones. Some 200 scientists and leading personnel from various departments concerned attended the conference which was sponsored by the regional people's government. [Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 9 Dec 80]

ANIMAL PROCUREMENT--As of the end of November, Xinjiang Autonomous Region had procured 1.68 million goats, 45,000 cattle and 124,000 pigs, topping the same period last year by 8 to 42 percent. Having readjusted the procurement quota and raised the procurement price for lambs, the autonomous region procured 450,000 lambs by the end of November, topping the same period last year by 200,000 head. [Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 16 Dec 80]

COLD-RESISTANT APPLE--Urumqi, 30 Dec (XINHUA)--Agronomists in Xinjiang Uygur Autonomous Region, northwest China, have bred 4 apple strains that can stand temperatures 20 to 30 degrees centigrade below zero, reported the region's agricultural department this week. Scientists of the Kuytun Agricultural Research Institute in the Junggar Basin, where the mercury drops to 40 degrees centigrade below zero on the coldest winter days, carried out the experiment for a dozen years and selected the cold-resistant strains from tens of thousands of hybrids of 14 varieties. The new strains produce a double yield, and the fruit can be stored longer than normal. The Xinjiang Uygur Autonomous Region has planted 266 hectares of saplings in the northern part. [OW301317 Beijing XINHUA in English 0726 GMT 30 Dec 80]

CSO: 4020

BRIEFS

GRAIN PRODUCTION--The masses in Zayu County, Xizang, reaped a bumper harvest with total grain output reaching 10 million jin this year, increasing by 28 percent over that of last year. Total output of rapeseed was 320,000 jin, setting all-time record. [Lhasa Xizang Regional Service in Mandarin 0015 GMT 8 Dec 80]

CSO: 4007

BRIEFS

SILK PRODUCTION--The masses in Jiaxing Prefecture, Zhejiang Province, harvested 983,000 dan of silk cocoon this year, setting an all-time record. The total output is over 10 percent more than that of last year. [Hangzhou Zhejiang Provincial Service in Mandarin 1100 GMT 8 Dec 80]

HUZHOU SILK PRODUCTION--Hangzhou, 10 Dec (XINHUA)--Zhejiang's Huzhou City has by now owned some 2,000 sets of looms capable of manufacturing more and better printed silks, plain silks and satins. The city's silk industry produced 25.68 million meters of silks and satins in 1979. [Beijing Xinhua Domestic Service in Chinese 0227 GMT 10 Dec 80]

COTTON PRODUCTION--The masses in Xiaoshan County, Zhejiang Province, sold 9.35 million jin of ginned cotton to the state as of the end of November this year, overfulfilling the state procurement quota by 2.7 percent. [Hangzhou Zhejiang Provincial Service in Mandarin 0400 GMT 17 Dec 80]

COCOON PRODUCTION--The Zhejiang Provincial Meeting on Cocoon Production was held in Hangzhou from 26 to 30 December. Yuan Fanglie, member of the standing committee of the Zhejiang Provincial CCP Committee and vice governor of the Provincial People's Government, spoke at the meeting. A responsible person of the provincial agricultural department made a summing up report at the meeting on planting mulberry trees and raising silkworms during the past year and introduced the experience of Sichuan Province in cocoon production. [Hangzhou Zhejiang Provincial Service in Mandarin 1100 GMT 31 Dec 80] Hangzhou, 30 Dec (XINHUA)--The various procurement departments in Zhejiang Province have procured more than 1.22 million duan of cocoon from the people in 1980, increasing by more than 10 percent as compared with the total quantity procured in 1979 and thus setting an all-time record. [Beijing XINHUA Domestic Service in Chinese 0109 GMT 30 Dec 80]

CSO: 4007

II. PUBLICATIONS

TABLE OF CONTENTS OF 'QIXIANG' NO 10, 1980

Beijing QIXIANG [METEOROLOGY] in Chinese No 10, 10 Oct 80 p 40

[Text] Main Contents

The Break and Reactivation of the Rainy Season over Qinghai-Xizang Plateau.....Huang Fujun [7806 4395 0971], Cui Xiumin [1508 1485 2404] and Shan Fumin [0830 2105 3406] (1)

Some Problems in Climatological Research in Our Country..... Zhu Binghai [2612 3521 3189], Department of Meteorology, Nanjing University (5)

Reviews

Long-Range Weather Processes and Long-Range Weather Forecasting .....Li Maicun [2621 7796 2625] (7)

Discussions

On the Divisions of Plum Rains (Meiyu) Periods.....Dong Xiaomin [5516 2556 2404] and Fu Shunying [0265 7311 3841], both of Jiangsu Meteorological Bureau (10)

The Divisions of Area Plum Rains Season and Single Station Plum Rains Period.....Yu Daren [0060 6671 0086], Yangzhou Regional Meteorological Station, Jiangsu (12)

Weather Forecasting at County Meteorological Station

Analysis and Forecasting of Hail in Ganyu in 1979.....Wu Zheming [0702 0772 2494], Ganyu Meteorological Station, Jiangsu (14)

Basic Knowledge

Method of Forecasting Typhoons by Use of Satellite Cloud Pictures (II).....The Joint Satellite Cloud Picture Analysis Group (25)

Modern Knowledge

Numerical Experiment of Synoptical Meteorology.....Zhou Xiaoping [0719 2556 1627] (28)

National Meteorological Center of China--Marching Toward Modernization.....Chen Shanmin [7115 0810 2404], Beijing Meteorological Center (30)

Basic Knowledge of Clouds

Cloud Formation.....Zhang Jihuai [1728 4764 3232] (31)

A Course of Lectures

The Methods of Calculating Some Physical Parameters for Heavy Rain Forecasting (VI) Divergence, Vorticity and Vertical Velocity in Boundary Layer.....Wen Baoan [2429 1405 1344]

Monthly Weather

July 1980--Dry in North China, Wet in South China.....Chen Delin [7115 1795 7207] and Xu Xianan [1776 1115 8189] (36)

9717
CSO: 4007

AUTHOR: SHEN Zhonghan [3947 0112 5060]
OUYANG Yi [2962 7122 1837]
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ORG: SHEN and OUYANG both of the Institute of Mechanics, Chinese Academy of Sciences; GUO of the Chinese Academy of Agricultural Mechanization Sciences

TITLE: "The Analysis and Experimental Study on the Response of Random Vibrations of Tractor-Trailer Systems"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 1, 1980 pp 9-19

TEXT OF ENGLISH ABSTRACT: In the present paper, the tractor drawing an unbalanced trailer or vehicle is simplified into a spring-mass-damping system of multi-degree of freedom. The power spectrum density and mean square value of acceleration at every output position, including the driver's seat, are computed by means of solving the frequency response function so as to show the changes of vibration magnitude through parameter-transformation. In addition to the auto-spectrum density of every input point and cross-spectrum density between the front and rear wheels, the cross-spectrum density between the right and left wheels is also considered in calculation based on the relevant road-spectrum data. In the study of comfortability of the seat, some rules for the seat vibration magnitude which changes with parameter-transformation have been obtained. These may be used in

[Continuation of NONGYE JIXIE XUEBAO No 1, 1980 pp 9-19]

future designing as references. The calculated results are approximately equal to the experimental values. The experiments were carried out on the auto testing runway at the Hot-Humidity Experimental Station of Hainan.

AUTHOR: JIAO Baoren [3542 1405 0088]
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ORG: Both of the Chinese Academy of Agricultural Mechanization Sciences

TITLE: "Data Processing of Random Load"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 1, 1980 pp 20-32

TEXT OF ENGLISH ABSTRACT: This paper discusses the counting methods used in the data processing of random load. The application of the irregularity factors of the oscillogram in classifying the time history of random load is presented. According to the characteristics of the random loads which farm machinery often meets, five representative count methods are chosen and applied to the statistical treatment of the measured load curve. In accordance with the accumulated damage rule and the accumulated frequency curves, the principles of application of the five count methods are given.

AUTHOR: GU Boda [7357 0130 6671]

ORG: Wuhan Institute of Technology

TITLE: "The Finite Element Analysis of the Connective Part of Thin-Wall Beam System"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 1, 1980 pp 33-41

TEXT OF ENGLISH ABSTRACT: The stress of the connective part of the thin-wall beam system is analyzed by the finite element method. In the analysis, the connective part is divided into many triangular plate elements. For the membrane stress state the constant strain element (the displacement function is the linear function of cartesian coordinates) is used and for the bending stress state the constant curvature element (the displacement function is the cubic function of the area coordinates) is used. Then, as a shell the connective part is computed. A node of the plow frame (the connective part that consists of the beams with box section) and a node that consists of the beams with channel section are computed and analyzed by this method.

AUTHOR: WU Yisheng [0124 5030 3932]
ZFNG Chunhua [2582 2504 5478]
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TITLE: "Inner Force Distribution and Warping Deformation of Dongfanghong-75 Tractor Frame"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 1, 1980 pp 42-51

TEXT OF ENGLISH ABSTRACT: The inner forces of the frame subjected to warping deformation are calculated and analyzed by the structural matrix moment method. A systematic study of the inner force distribution of the frame with changing structural parameters and the important reasons for the insufficiency in strength and rigidity of the frame is carried out. A method of improving the strength and rigidity of the frame has been suggested in this paper.

AUTHOR: None

ORG: Research Group of Low Quenching Degree Steel Gears

TITLE: "Research on Gears Made from Low Quenching Degree Steel"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 1, 1980 pp 52-63

TEXT OF ENGLISH ABSTRACT: This paper presents the composition of the low quenching degree steel and its metallurgical and mechanical properties as well. Long range experiments and measurements indicate that making the heavy-load gears of a vehicle from low quenching degree steel instead of alloy steel gives fine and stable quality. The properties of the material are equivalent to or better than those of 20CrMnTi or 20CrMnMo. The rig test shows that the durability of the gear reaches a level near to or exceeding that made from low carbon alloy steel. The service life is more than 5000 hours as defined. Due to the lower cost and less energy consumption, it is rather beneficial to make the heavy-load gear from the low quenching degree steel.

AUTHOR: ZHOU Guobin [0719 0948 1755]

ORG: Chinese Academy of Agricultural Mechanization Sciences

TITLE: "Efficiency of the Reducer with Involute Gear of Less-Tooth Difference"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 1, 1980 pp 64-72

TEXT OF ENGLISH ABSTRACT: The planetary reducer with involute gear of less-tooth difference is a rather new type of reduction device. By comparison with the conventional type, it is more compact, weighs less and has a higher reduction ratio. Due to the lace of practical data, there has been no confirmed information about the efficiency until now.

The experiments on the efficiency of the new reducer were carried out with a dynamometer. This article presents the results. The experiments on a pin type output device and a zero-tooth difference output device were also conducted, and the analysis of the efficiency is presented, too.

AUTHOR: DING Xifan [0002 0823 5400]

ORG: Scraper Research Group, Nenjiang Agricultural Machinery Institute of Heilongjiang

TITLE: "A Preliminary Study of Elevating Scraper"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 1, 1980 pp 73-82

TEXT OF ENGLISH ABSTRACT: In this paper, the experiment and research of an elevating scraper and its main working parts verify the correct design idea that the total operating resistance determined, in accordance with farm power features in our country, should be divided among the several operation procedures to be overcome so as to increase the bucket capacity. The determination of the principal design parameters is analyzed, and these may be applied to development of a large elevator bucket capacity and high-efficiency scraper.

AUTHOR: MU Weifeng [4476 4885 6265]

ORG: Chinese Academy of Agricultural Mechanization Sciences

TITLE: "A Comparative Test of the Performances of Several Kinds of Plow Bottoms and Their Surface Analysis"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 1, 1980 pp 83-100

TEXT OF ENGLISH ABSTRACT: Under the measurements of four classifications of five kinds of American plows and two kinds of domestic plows and their field performance tests in the Beijing rural area, the regression equations of horizontal constitutive angle of plow bottom surface have been derived by means of mathematical statistics: $\theta_I = a_0 + a_1 Z$, $\theta_{II} = de^{-bz^2}$ $(0 < b < 1)$ and $\theta_{III} = dZ^b$ for American plow bottoms, and $\theta = 0.1293Z^{1.2513}$ for BT35 domestic plow bottoms. The regression equation for the USSR's old land type BTU35 plow bottom has been modified to $\theta = \frac{7.88Z^2}{Z^2 + 99.30}$.

At the same time, the empirical formulas of specific resistance have been derived, $k = a + b_2 v^2$ for general purposes, and $k = a + b_1 v$ for suitable plowing speeds. The relationships between surface parameters, performance curves of plow bottoms and power characteristics of plowing, plowing qualities as well as suitability of speed have been illustrated by equations determining reasonable structure

[Continuation of NONGYE JIXIE XUEBAO No 1, 1980 pp 83-100]

parameters and performance analysis.

The American NU 16 inch plow bottom has been selected as a better type under high speed. Its specific resistance is smaller for higher speed, and has a wider speed range as well as having the plowing qualities to meet local requirements.

The plow bottom performance and surface analyses in this paper will be used as references for design and research work on high speed plow bottoms.

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TITLE: "Comment on the Laser Type Droplet Size Distribution Analyzer"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 1, 1980 pp 101-109

TEXT OF ENGLISH ABSTRACT: The measurement of the droplet size distribution in the research work of plant protection machinery is a tremendously laborious task and accurate results are not easily acquired by customary means. The working principle and operating conditions of the laser type droplet size distribution analyzer are described briefly in this article. The measuring technique is based on the Fraunhofer diffraction of the parallel beam of the monochromatic light by the moving droplets. The Fourier transform lens is used to focus the diffracted light onto the multi-element photoelectric detector to measure the light energy distribution. The minicomputer is employed to translate the light energy distribution into the corresponding droplet size distribution. The range of the droplet dimensions which may be metered by the present analyzer is 1-1800 microns. The accuracy of the technology is verified to be about 4 percent error in the mean diameter of the droplets. It is noteworthy that the method is non-intrusive and extremely rapid. The effect of multiple scattering has been shown to be minimal up to 50 percent obscuration of the incident light for a selection of

[Continuation of NONGYE JIXIE XUEBAO No 1, 1980 pp 101-109]

different liquids and droplet size ranges. The instrument may be used not only for measuring the droplet size distribution in the air stream, but also for metering the solid granule size distribution in the air current. In addition, with certain modifications, the apparatus may be employed for gauging the solid or liquid particle size distribution in the liquid flow. The instrument therefore has numerous uses in other scientific research fields.

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TITLE: "Testing and Analysis of the Motion Performance of the Power Rice Transplanter Aggregate with Two Steel Traction Wheels"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 3, 1980 pp 1-9

EXCERPT FROM ENGLISH ABSTRACT: In the development of the power rice transplanter in China, a single steel traction wheel is usually used. However, the small multi-purpose carriers or walking tractors are equipped with two traction wheels for most field operations. Consequently, it would be better if the rice transplanters could also be trailed by a carrier with two traction wheels.

Straightness of travel, tractive performance, and headland turning have been tested in paddy field operations and are discussed.

AUTHOR: XU Chi [1776 7459]

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TITLE: "Effects of Matrix Structures on Fracture Toughness and Fatigue Fracture of Ductile Cast Iron"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 3, 1980 pp 10-19

TEXT OF ENGLISH ABSTRACT: The measurement of the strength, fracture toughness and threshold value ΔK_{th} of different matrix structures of ductile cast irons has been systematically reported, and the effects of the content of pearlite on the strength, fracture toughness and fatigue fracture have been investigated. It is found that the optimum content of pearlite is 80~95 percent, which provides high strength, suitable fracture toughness and better fatigue fracture properties. Defects control for a crankshaft of ductile cast iron is also discussed.

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TITLE: "Investigation of Performance for Increasing Cycloidal Hydraulic Motors"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 3, 1980 pp 20-29

TEXT OF ENGLISH ABSTRACT: Experiments and analysis were carried out by the author to investigate the efficiency of cycloidal hydraulic motors. In this paper, the effects of the spline clearance and the meshing pair of the cycloidal needle roller on motor efficiency are discussed, and means of improvement are presented.

To reduce the high contact stress of the meshing pair of the needle roller, a group of optimized cycloidal parameters is obtained through the comparative calculations with different schemes.

AUTHOR: FAN Yacao [5400 7161 2347]

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TITLE: "A Convenient Method to Study Tractive Performance of Crawler Tractor--Superposition of Line Element"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 3, 1980 pp 30-34

TEXT OF ENGLISH ABSTRACT: One of the main aspects of soil-vehicle system mechanics concerns the tractive performance of vehicles and their calculation. At present an integral method is commonly used to estimate the value of traction produced by a crawler tractor. There are, however, two problems:
1. Grousers cut the soil of the track ground contact area into many small sections while the crawler tractor travels on the ground. There will not be continuously propelling forces developed from the ground-contact area, so it will be improper if the propelling force is integrated as a continuous function on the ground-contact area.
2. Because the factors used in the integral equation are derived from shear testing or other testing curves, the traction of the vehicle can only be estimated approximately even if the integral is correctly and exactly carried out.

In this paper the author presents a new method of calculating the traction of the

[Continuation of NONGYE JIXIE XUEBAO No 3, 1980 pp 30-34]

crawler tractor based on the testing curves of a single track shoe. The traction value can be derived from a "Drawing Method" which leads to the same results, but the complex integral calculation is avoided.

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TITLE: "Calculating Program for Inspection Gauge Templet Curves of Plow Bottom Surface"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 3, 1980 pp 35-38

TEXT OF ENGLISH ABSTRACT: Based on the mathematical model of parabolic directrix and the functional relation between the elementary angle and the height of the horizontal element, this paper reports the development of the program for calculating the coordinate values of all required inspection gauge templet curves of the plow bottom surface which is formed by horizontal straightline elements.

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TITLE: "Design, Testing and Research on Low Specific Speed Self-Priming Pumps"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 3, 1980 pp 39-46

TEXT OF ENGLISH ABSTRACT: Based on the analysis of the data of domestic and foreign self-priming pumps, the author puts forward a new design of double layer housing of externally mixed self-priming pumps and extended impeller D_2, b_2 and $B_{2л}$, in order to raise the self-priming performance without decreasing the efficiency. These resulted in a better self-priming performance and higher efficiency and reached a level approaching the advanced level of the same kind of foreign pump. Based on a large number of experiments in four pump housings and seven impellers, the author presents valuable data for designing self-priming pumps. The concept has been used in production already.

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TITLE: "The Starting Characteristics of a Pumping Station Installed with Axial and Mixed Pumps"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 3, 1980 pp 47-57

TEXT OF ENGLISH ABSTRACT: The starting characteristic of a large pumping station presents an important problem for the design and selection of a motive motor. The parameters of the starting characteristic depend to a great extent upon the type of whole installation, of which two main kinds will be discussed: one with outlet siphon and the other with drop gate. To obtain the starting characteristics two methods by experimental and computing means are given for different installations. The dynamic hydraulic moment caused by flow resistance is approximated with the static characteristic, and exact values were also obtained by an electronic computer. A computer program is given in this article, too.

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TITLE: "Test and Research on Slip-Pin Safety Clutch"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 3, 1980 pp 58-67

TEXT OF ENGLISH ABSTRACT: A slip-pin safety clutch is a safety mechanism. It has been used widely in agricultural machinery.

In this paper, the working principle of the slip-pin safety clutch is discussed. The equation for calculation, method of design and range of main parameters to be chosen are proposed. The random working torques are evaluated and checked through experiments.

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TITLE: "Research on Tacho-Monitor Used on Combine Harvester"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 3, 1980 pp 68-77

TEXT OF ENGLISH ABSTRACT: A tacho-monitor with sound-light signal devices is used on a combine harvester to control the operation. The devices are located where malfunctions might occur, thus keeping the harvester in good working condition constantly and resulting in high efficiency.

The author also gives some ideas on developing a series of tacho-monitors, and different varieties.

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TITLE: "Some Problems Relating to Atomization Theory in Plant Protection Machinery"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 3, 1980 pp 78-88

TEXT OF ENGLISH ABSTRACT: This paper describes some problems relating to the liquid atomization theory in plant protection machinery. These are: the motive force of liquid atomization, energy consumption in liquid atomization, liquid atomization by: the tip of a capillary tube; a flat-fan type nozzle; a rotating disc; a swirl nozzle; an air blast; an electrostatic force; and liquid atomization by ultrasonic waves.

All these theories, however, are applied with certain limitations. Further research and experiments are required for the improvement and invention of plant protection machinery which are urgently needed in agricultural production.

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TITLE: "On the Technical-Economic Model of Agricultural Modernization/Mechanization"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 3, 1980 pp 89-102

TEXT OF ENGLISH ABSTRACT: In this paper attempts were made to highlight some of the basic technical and economic progress in agricultural modernization in the advanced industrialized countries, and to put forth the national targets for agricultural modernization in the PRC. Basic conditions and differences in the labor force, capital, energy sources, technological level and time requirement between the advanced industrialized countries and the PRC were compared, and the possible orientation and some technical and economic policies for agricultural modernization/mechanization in the PRC were formulated for further discussion and reference. In addition, characteristics of various models of agricultural modernization/mechanization were tabulated and their differences stressed.

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TITLE: "Rare Earth Elements in Some Soils from Guangzhou"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 4, Nov 80 pp 299-307

TEXT OF ENGLISH ABSTRACT: In this paper the distribution of rare earth elements (REE) in soils is discussed based on the analytical data of 10 soil samples collected from Guangzhou. They are red soil, four derived from granites and six derived from sediments or sedimentary rocks. The latter include two paddy soils derived from recent river deposits, two purple soils derived from red rock series,

[Continuation of TURANG XUEBAO No 4, Nov 80 pp 299-307]

one red soil derived from sandstone, and one terra rossa derived from limestone. The contents of 10 REE (La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Yb and Lu) were determined by instrumental neutron activation analysis (INAA) and the contents of Sr were determined by the X-ray fluorescence method. The relative abundances of REE of samples of the soils derived from granite and sedimentary materials were obtained from the data normalized by mean values of chondrites and shales respectively. Based on relative abundance patterns of REE, the contents of REE that had not been obtained by the INAA technique and the abnormal values of Eu and Ce in samples were estimated. The results showed that the total REE content in soils derived from granite ranged from 134 to 598 ppm, and that in soils derived from sedimentary materials ranged from 224 to 270 ppm. The ratio of light REE to heavy REE in granitic soils was from 2.44 to 12.9, and that in sedimentary soils 7.3 - 21.4. La, Ce and Nd were the main components in light REE, among which Ce amounted to the most. It has been found that the abundance of REE in all samples follows the Oddo-Harkins rule, i.e., elements of even atomic numbers have a greater abundance than those of neighboring odd atomic numbers. In five of six sedimentary soils, Ce was presented normally or as a slightly positive anomaly (1.00 - 1.24), while in limestone soil Ce was presented as a negative anomaly (0.71). Due to the Ce deficiency in deep seawater, the chemical deposits in limestones often presented deficiencies of Ce. Therefore, the Ce deficiency of this sample was inherited from the characteristic of its parent material. All four granitic souls showed a negative anomaly of Eu. Their Eu anomaly values were 0.13, 0.17, 0.32 and 0.60

[Continuation of TURANG XUEBAO No 4, Nov 80 pp 299-307]

and, correspondingly, the Sr contents were < 5, < 5, 7.5 and 30 ppm respectively. Due to the parallel chemical behavior exhibited between Eu^{2+} and Sr^{2+}, and the strong leaching of Sr in red soils in Guangzhou, it is possible that the Eu^{3+} is reduced to Eu^{2+}, and then leached together with other divalent positive ions such as Sr^{2+}.

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TITLE: "Formation and Fertility of the Alpine Meadow Soil in Qinghai Province"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 4, Nov 80 pp 308-318

EXCERPTS FROM ENGLISH ABSTRACT: Alpine meadow soil is widely spread in the South Qinghai Plateau and partly distributed in Haibei, Hainan and Huangnan regions on the Qinghai-Tibet Plateau. Alpine meadow soil, being the principal soil of the range, is situated in the regions of 4,000-4,700 meters above sea level on the South Qinghai Plateau, and 3,300-4,000 meters in other regions respectively. It develops under the conditions of cold semihumid mountainous climate with a mean annual air temperature of 0 - 5.7°C and precipitation of 270-550 mm. Its predominant vegetative cover is Kobresia pygmaea. Such distribution may be considered as a result of the influence by the combined actions of horizontal and vertical zonality.

It has been found that under the influence of extravagant grazing, destruction by Ochotona curzoniae and other factors, some of the winter-spring pastures mantled

[Continuation of TURANG XUEBAO No 4, Nov 80 pp 308-318]

by carbonate alpine meadow soils have deteriorated, their soddy layers (A_s) having partly or wholly fallen away, hence the succession of vegetation takes place. Instead of the primary vegetation, detrimental and poisonous weeds have infested and increased gradually, and the productivity of the pastures is reduced. For the reclamation and utilization of pastures, different ways and methods for proper management and improvement have to be adopted.

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TITLE: "Characteristics of Decomposition of Plant Residues in Soils of the Southern Part of Jiangsu Province"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 4, Nov 80 pp 319-327

TEXT OF ENGLISH ABSTRACT: Decomposition experiments were carried out under field conditions in Wuxi district, Jiangsu Province, with 13 kinds of plant residues, such as the straws of cereal, and leguminous crops, including green manure plants, most of them usually grown in the Tai Lake basin.

Under favorable conditions the decomposition of plant materials proceeded much more rapidly during the first month, then became slower gradually and remained almost unchanged until the second or even third year. The difference among the amounts of C decomposing from different plant residues was greatest in the initial one to three months, and the difference could be found even in the third year. After one or two years of decomposition, the amount of C retained in the soil was significantly

[Continuation of TURANG XUEBAO No 4, Nov 80 pp 319-327]

correlated with the lignin content of (% lignin) [% of (Organic solvent extracts + H_2O extracts + Carbon-hydrate)]$^{-1}$ of the plant residues, but not correlated with the C/N ratio. For the same plant residues, the amount of C retained in paddy soil was usually higher than that in upland soil after one or two years.

Results obtained in pot and incubation experiments showed that in addition to the C/N ratio, the lignin content seemed to be an important factor affecting the mineral nitrogen of soil during the decomposition of plant residues.

In comparison with the plant residues having a similar C/N ratio and less lignin, the amount of mineralized or immobilized nitrogen in plant residues of higher lignin content was less.

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TITLE: "The Fertility of Five Paddy Soils in Relation to the Growth of Crops in the Southern Part of Jiangsu Province"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 4, Nov 80 pp 328-335

TEXT OF ENGLISH ABSTRACT: Studies on the interrelation between soil fertility and crop growth of five paddy soils collected from the southern part of Jiangsu Province were conducted in pot experiments. Rice, millet and soybeans were used as the first crop, each followed by naked-barley as the second crop and rice as the third. The results obtained indicated that the potential fertility of soils differed significantly from their available fertility, and each soil had its own characteristics.

Even though the yields of the three crops were not only correlated with total nitrogen, alkali-hydrolyzable nitrogen, mineralizable nitrogen or available phosphorus content in soils, but also with the nitrogen content or phosphorus content in those plants to some extent, the results obtained were not significant statistically. Thus it seems that the yields of crops or nutrient composition of plants

[Continuation of TURANG XUEBAO No 4, Nov 80 pp 328-335]

were determined by many factors.

The nitrogen balance sheet showed that the amount of uptake by a plant at harvest time was not equal to the consumption in soil. For rice, the difference ranged from +131 to +434 mg N/6 kg soil, indicating an increase of N from additional sources. As for millet, the difference value varied from -311 to +98 mg N/6 kg soil, indicating N loss through some unknown way. The difference value for soybeans was +715 to +2149 mg N/6 kg soil, and this case was undoubtedly due to the symbiotic N-fixation.

Among the multiple cropping systems, rice--barley--rice gave the highest economic output; soybean--barley--rice showed the highest biomass production; and millet--barley--rice was lowest in both economic value and yield.

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TITLE: "The Effects of Inoculation of Mycorrhizal Fungi on Phosphorus Nutrition and Growth of Citrus Seedlings"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 4, Nov 80 pp 336-345

TEXT OF ENGLISH ABSTRACT: Two mycorrhizal fungi, CC-1, CC-2, were used to inoculate the roots of three citrus species. Anatomic investigation showed that they might be associated with the host plant to form endomycorrhiza, but there were significant differences in the degree of infection among different citrus species.

At four and one-half months after inoculation, the rate of infection of glorious orange inoculated with CC-1 [decreased?] and it was found that there were mycelia on the root surface and plenty of vesicles and arbuscules in the cortex. The infection rate of rough lemon inoculated with CC-2 was 70 percent, and there was no mycelium on the root surface, and the infection rate of Poncinus trifoliata was minimal.

An experiment with phosphorus fertilizer labeled by radioisotope ^{32}P showed that

[Continuation of TURANG XUEBAO No 4, Nov 80 pp 336-345]

mycorrhiza enhanced citrus seedlings in absorbing more phosphorus both from fertilizer and from soil, therefore the total phosphorus content and phosphorus level per unit dry matter of inoculated seedlings were significantly higher than those of the control. It was also found that the fresh weight, length of shoots and leaves and diameter of trunks of inoculated citrus seedlings were greater than those of the controls.

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TITLE: "Ecological Distribution of Fungi in Submerged Paddy Soil"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 4, Nov 80 pp 346-354

TEXT OF ENGLISH ABSTRACT: This article deals with the characteristics of the mycoflora in plow layers of the permanently submerged paddy soils (PPS) which have developed on lacustrine deposits in central and southern Jiangsu Province, alluvial deposits along the lower Changjiang River, and loessal deposits near Nanjing, and of other submerged soils under anaerobic conditions in various districts. The characteristics of mycoflora of the soils mentioned above in comparison with those under temporarily submerged paddy soils (TPS) are also described. The results obtained are as follows:
1) The fungus population in PPS is smaller than that in TPS, and the micoflora in PPS is characterized by the occurrence of Emericellopsis and Phoma + No 1221. Little variation in fungi quantities and mycofloral components was found in PPS.
2) Drainage is the usual measure for the improvement of the conditions of PPS. Experiments revealed that the composition of mycoflora of PPS was completely changed

[Continuation of TURANG XUEBAO No 4, Nov 80 pp 346-354]

to that of TPS after four to five years of drainage.
3) The improvement of soil aeration by drainage induces a series of changes in physical and chemical conditions of PPS. It was found that most fungi could grow under anaerobic soil conditions of PPS except Emericellopsis and Phoma + No 1221, which could develop much better under those conditions.

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TITLE: "The Effect of Silicate Slags on Rice in Paddy Soils Derived from Red Earth"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 4, Nov 80 pp 355-364

TEXT OF ENGLISH ABSTRACT: This article deals with silicon supplying levels and the response of rice plants to Si-fertilizer on the major paddy soils derived from red earth in south China.
1. The effect of Si-fertilizer is negatively correlated with the content of available silica in soils. It seems that the critical value of available silica in paddy soils derived from red earth on Quaternary red clay in southern China may be lower than that in Japan and Korea, but higher than that of Taiwan Province in China.
2. The effect of silicate fertilizer on rice is related to the amount of nitrogen fertilizer applied. For paddy soils containing higher available silica, the application of silicate fertilizer under the conditions of the usual amount of nitrogen fertilizer showed no significant effect. But with the increase of nitrogen

[Continuation of TURANG XUEBAO No 4, Nov 80 pp 355-364]

fertilizer applied, the silicate fertilizer would often significantly increase the rice yield.
3. The content of available silica in paddy soils derived from red earth varied with their parent materials. The content of available silica in the paddy soil derived from granite and red sandstone is about 5 mg/100 g soil. In pot cultural experiments, application of amorphous silica to these paddy soils increased the dry weight of rice straw by 11.0 g/pot and 8.6 g/pot respectively.
4. Because silicate slags are alkaline materials containing CaO, the application to paddy soils in the proportion of 0.5 percent would increase the pH value of the soil 0.4 - 1.0 units. Results obtained by plant analysis and labeling P^{32} have proved that the application of $CaCO_3$ or silicate slage decreased phosphorus absorbed by rice plants by about 17 percent. Therefore, consideration must be given to adopting reasonable methods and amounts in application of the silicate slags as fertilizer in the soils mentioned above.

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TITLE: "The Reclamation of Saline Soil by R Cultivation in Southern Xinjiang"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 4, Nov 80 pp 365-373

TEXT OF ENGLISH ABSTRACT: In the Tarim basin, one year of rice cultivation in soils of high salinity brought about a decrease in salt content to the extent of 20 to 80 percent. In the soil profile, desalinization is most remarkable in the plowed layer.

Under equal conditions, the longer the period of rice cultivation is prolonged, the thicker the layer of desalinization is formed. Great changes have taken place in the composition of the soil salts after rice cultivation. In a farm near Aksu, for example, the main component of salt in soil was mainly chloride, which changed into sulfate ranging from 60 to 90 percent of total anions after four years of rice cultivation, and, at the same time, the sodium was replaced by calcium as the main component of cations, up to 50-80 percent of the total cations. The desalinization and changes in the components of the salts after rice cultivation provided favorable

[Continuation of TURANG XUEBAO No 4, Nov 80 pp 365-373]

conditions for the succeeding crop.

The downward movement of water in paddy fields not only desalinized the soil to a certain depth, but also decreased the salinity of groundwater, the changes depending on local hydrogeological and drainage conditions.

In the area along the Tarim river, the original salinity of groundwater is lower and easily formed the layer of desalinized groundwater through rice cultivation and irrigation. But in the juncture areas between the flooding plain and the diluvial fan where the original salinity of groundwater is higher, generally up to 20-60 g/l, the desalinization of the soil and groundwater is slower and more difficult, even under favorable drainage conditions. Therefore, in the areas of poor drainage, the rice cultivation may only bring about temporary benefits. In this case a portion of salts is removed from the land through drainage outlets, but under drying conditions the salts may rise again with the upward capillary water and accumulate in surface soil. After being kept dry with farming from one to three years, the beneficial effects of rice cultivation will disappear completely. Then it is necessary to plant rice once more. Thus, a rotation system of paddy rice and upland crops is developed in order to control the salt regime in the plowed horizon of the soil. The period of such a rotation system depends greatly upon the rate of desalinization of the soil and groundwater.

[Continuation of TURANG XUEBAO No 4, Nov 80 pp 365-373]

It is obvious, therefore, that the drainage is of most importance in the improvement of saline soil. Due to the small difference in the elevation of the land surface, it is impossible to drain the soil with drainage ditches which cannot be dug to an adequate depth. For acceleration of the desalinization of soil and groundwater, it is necessary to adopt reasonable systems combining gravity drainage with pumping drainage, shaft drainage with ditch drainage, and shallow drainage with deep drainage on the basis of local conditions.

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TITLE: "The Application of Cluster Analysis on the Material Classification for Paddy Soils in Tai Hu Area"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 4, Nov 80 pp 374-381

TEXT OF ENGLISH ABSTRACT: As far as classification of paddy soils in the Tai Hu area is concerned, the character difference between soil individuals i and 1

$$d_{i1}(1) = \sum_{j=1}^{m} |x_{ij} - x_{1j}|$$

is somewhat better than their Euclidean distance. The mean squared distance between soil classes G_r and G_k

$$D^2_{rk} = \frac{1}{n_r n_k} \sum_{i \in G_r} \sum_{l \in G_k} d^2_{il}$$

[Continuation of TURANG XUEBAO No 4, Nov 80 pp 374-381]

is better than their minimum and maximum distances. In these equations x_{ij} and x_{1j} are the standardized values of character j for soils i and 1, m is the number of the character, and n_r and n_k are the numbers of soils in classes G_r and G_k.

The distance between soil individuals was defined as the character difference, and the distance between soil material classes was defined as the mean squared distance. Based on this definition, 30 paddy soils in the Tai Hu area were examined and divided into 5 material categories, i.e., low fertility; medium fertility, coarse silty type; medium fertility, fine silty type; high fertility and medium fertile soils with high potential fertility.

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TITLE: "Preliminary Study on the Application of an Automatic Differential Potentiometric Titrator for the Determination of Chloride in Salt-Affected Soils"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 4, Nov 80 pp 382-389

TEXT OF ENGLISH ABSTRACT: The chloride content in various salt-affected soils in Jiangsu, Xinjiang, Henan and Gansu Provinces is determined by three methods, which are the automatic differential potentiometric titration, Mohr method and anticipated end point potentiometric titration.

The advantages of the application of an automatic differential potentiometric titrator for the determination of chloride in salt-affected soils are as follows:
1. The result of determination is not affected by the change in E_0' of the electrode, slope of the titration curve and the variation in ionic strength of the soil solution.

[Continuation of TURANG XUEBAO No 4, Nov 80 pp 382-389]

2. The method is rapid and accurate. It is not necessary to anticipate and check the end point potential. The results of determination have good reproducibility.
3. This instrument can also be used in other fields, such as complexometric titration, oxidation-reduction titration, acid-base titration, etc.

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10 August 1981

China Report

AGRICULTURE

No. 157

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10 August 1981

CHINA REPORT

AGRICULTURE

No. 157

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

Reports on Development of State Farms
(ZHONGGUO NONGKEN, No 4, 5, 1981)..... 1

Need for Further Readjustments, by Zhang Linchi
Responsibility Credited for High Output, by Yu Liren
Building Small Hydroelectric Power Stations
Collective, Individual Economies on State Farms
Household Sideline Occupations
Improvement in Living Conditions

Briefs
Agricultural Annals 15
First Viral Insecticide 15
National Summer Wheat Meeting 16

Anhui

Briefs
Early Rice 17
Yuexi County Progress 17

Gansu

Briefs
Wheat Harvest 18

Guangdong

Favorable Report on Peasant Life in Guangdong Reported
(ZHONGGUO XINWEN, 19 Jun 81)..... 19

Briefs
Grain Conference 21
Foshan Prefecture Flood 21
Aircraft for Afforestation 21
Bumper Cocoon Crops 22

Guangxi

Briefs
Silkworm Cocoon Procurement 23
Sugarcane Production 23
Grain Drier Symposium 23
Fishery Development 24
Sow, Piglet Breeding 24
Water Conservancy Projects 24

Guizhou

Briefs
Chemical Fertilizer Output 25

Hebei

Farm Input, Output in Tianjin Suburbs Discussed
(TIANJIN RIBAO, 27 Jun 81)..... 26

Briefs
Tianjin Agriproducts 27

Henan

Briefs
Gushi County Bumper Rape Harvest 28
Good Wheat Harvest 28
Zhoukou Prefecture Bumper Harvest 28
Antidrought Work Meeting 28
Nature Conservation Conference 28
Cotton Production Conference 29
Grain Production 29
Grain Contract System 29
Underground Grain Silos 29
Wheat Harvest 30
Nanyang Prefecture Agricultural Production 30
Wheat Harvest 30

Hubei

Spread of Hybrid Rice Reported
(CHANGJIANG RIBAO, 13 Jun 81)..... 31

Soil Tests Used To Determine Kinds, Rates of Fertilization
(HUBEI RIBAO, 19 Jun 81)..... 32

Rural Economic Role of Commune, Brigade Enterprises Examined
(HUBEI RIBAO, 22 Jun 81)..... 33

Briefs
Rapeseed Procurement 36
Animal Husbandry 36
Grain Procurement 36
Flood Preparations 36

Hunan

Briefs
Tobacco Tax 37
Early Rice 37
Irrigation Circular 37
Water Conservancy Meeting 37
Flood Prevention 37
Hog Production 38
Egg Production 38
Xingxiang County Agriculture 38
Agricultural Credit 38

Jiangsu

Briefs
Hybrid Rice Expanded 39
Wujiang County Harvest 39

Jiangxi

Briefs
Nancheng County Rice Seeds 40

Shandong

Briefs
Wheat Harvest 41
Prawn Larvae Breeding 41

Shanxi

Problems, Proposals About Millet Production Examined
(Zhang Huozhan; SHANXI NONGYE KEXUE, May 81)..... 42

Guidelines for Advance Distributions of Summer Grain Cash Set (SHANXI RIBAO, 22 Jun 81)..... 46

Briefs
Non-Collective Harvesting of Wheat 49

Xinjiang

Briefs
Agriculture, Livestock Circular 50
Livelihood Improvement 50

Zhejiang

Briefs
Rape Output 51
Agricultural Statistics 51

ABSTRACTS

AGRICULTURAL RESEARCH

HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES], No 6, Jun 81..... 52

LIAONING NONGYE KEXUE [LIAONING AGRICULTURAL SCIENCES], No 3, 15 Jun 81..... 54

AGRICULTURAL TECHNOLOGY

FUJIAN NONGYE KEJI [FUGIAN AGRICULTURAL SCIENCE AND TECHNOLOGY], No 3, 10 Jun 81..... 56

CONSTRUCTION

SHUINI [CEMENT], No 5, 10 May 81..... 60

LABOR SYSTEM

NONGCUN GONGZHU TONGXUN [RURAL WORK NEWSLETTER], No 6, 5 Jun 81..... 61

VETERINARY MEDICINE

XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE, No 1-2, 1981..... 62

SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY], No 5, 20 May 81..... 67

I. GENERAL INFORMATION

REPORTS ON DEVELOPMENT OF STATE FARMS

Need for Further Readjustments

Beijing ZHONGGUO NONGKEN [CHINESE AGRICULTURAL RECLAMATION] in Chinese No 4 1981 p 4-5

[Artical by Zhang Linchi [1728 2651 3069], Alternate Member of the CCP Central Committee]

[Text] As a result of implementation of the line of the Third Plenary Session of the 11th Party Central Committee and adherence to a program of readjustment during the past several years, the extent of increase in output and profits of state farms has been substantial. Grain and pulse output from the agriculture and land reclamation system nationwide during 1980 totaled 15 billion jin, 7.27 percent increase over the great bumper harvest year of 1979. Cotton output totaled 1.74 million dan, an 8.14 percent increase over the previous year. Total output of oil seed crops was 2.3 million dan, a 9.7 percent increase in output over the previous year; sugar crops totaled 28.27 million dan, a 24.5 percent increase over the previous year. The total output value from industries reached 3.9 billion yuan, a 17.13 percent increase over 1979, and rubber, tropical crops, and other trades and industries also showed varying degrees of increase. After having made fairly good achievements, how can agriculture and land reclamation enterprises further carry out readjustment of programs?

In carrying out readjustment programs during 1981, state farms will mostly "scale down capital construction, and raise production." In a situation of great retrenchment in capital construction investment, readjustment can make better use of farm productivitly, put production on the track of steady development, and bring about new improvements in the levels of administration and management to make greater contributions to the country.

Further Readjustment in the Thrust of Investment

During the period of readjustment, all farming and land reclamation enterprise funds (state distributed investment, surplus funds from the contracting for work to be done, and depreciation funds) should be used on a priority basis to support simple further production, and used to equip or futher equip existing enterprises. In general, there will be no construction of new projects. Where state financial and material resources permit, there is to be reclamation of wilderness lands within the limits of capabilties to increase new production capacity.

Development of production has two aspects. One is construction of new production capacity; the other is making the most of existing production capacity. During the period of readjustment, farm and land reclamation enterprises should concentrate on improvements in consolidation, taking fullest advantage of existing production potential. From improved consolidation, they should move on toward steady development.

Equipping and further equipping existing enterprises entails principally the following: Equipping and further equipping with farm machines and implements (including farm animal machines and implements, seed processing machines and tools, plant protection machines, and tools); maintenance and equipping of water conservancy and farmlands construciton; planting of trees for afforestation, and improvement of grasslands. Most of these are technical measures for production; some have a capital construction character; and the sphere of some is not that clear cut. Proper use of funds requires clearly definig the character of these items. State investment and approved outlays by others are to be used in projects of a capital construciton nature. Funds surplus to contracting for work are to be used in measures for production of a technical nature.

Funds needed for scientific research, culture and education, hygiene, and labor insurance will be guaranteed to the maximum extent. There is need to increase the proportion of investment for worker dormitories and welfare benefits. As production develops, gradual improvements is to be made in workers' material and culteral standards of living. State farms should build new small cities and towns in a planned way to gradually narrow the differences between city and countryside.

Readjustment of the Proportions of Various Industries Within Agriculture

State farms should adhere to a program of "diversification within a single industry," and should particularly proportion agriculture, forestry, and animal husbandry. For many years we have given major emphasis to grain production, and this is right. However, insufficient attention has been given forestry and animal husbandry production, as a result of which forestry and animal husbandry as a part of agriculture are proportionately excessively small. This state of affairs is disadvantageous to the material energy cycle in the material energy cycle in the agricultural ecology system. It reduces the fertility of the soil, and does not make full use of natural resources. Therefore, it is necessary to readjust the proportion of various industries within agriculture, and it is necessary to build a new scientific ecologically balanced system on the basis of natural resources in local areas.

In the readjustment of the proportion of various industries within agriculture, it is necessary, first of all, to increase the ratio between forestry and animal husbandry. The land area within state farm plans is limited, yet we intend that the forest area will amount to 5 or 10 percent, and on hilly areas more than 15 percent, within the space of several years. This is possible and also necessary to achieve. The output value of our livestock industry amounts to only somewhat more than 10 percent of the total output values of agriculture, too small a proportion. More seriously, the ratio of the livestock industry on numerous farms is still declining! Vigorous development of animal husbandry must be made to increase the ratio of the livestock industry. Substandard grain, bran, stalks and stems, fodder, and green manure must be used to the full so that farming and animal husbandry will ba mutually reinforcing and mutually promoting.

As the degree of agricultural mechanization steadily increases, the problem of excess workforce on numerous farms becomes more and more manifest. Development of diversification is a rational way to use the workforce, to make the most of local advantages, and to enliven the economy.

Readjustment of the Proportions Within Farming

While assuring grain production, there is need to adapt general methods to local circumstances for the development of economic crops such as cotton, oil seed crops, sugar crops, and other special products. Naturally, we take and overall view, and not only assure the quantity of grain and the amount of grain surrendered to the state, but also steadily increase grain output. Within the farming system, there is need for rational rotational cropping, return of stalks and stems to the field, the growing of green manure, increased applications of organic fertilizer, and where conditions permit, trial rotational farming of field crops and pasture grass.

Readjustment of the Internal Proportions of the Animal Husbandry Industry

We have overemphasized "large scale raising of one's own hogs," in livestock production, creating, as a result, an irrational situation in the internal proportions of the animal husbandry industry. In the readjustment process, there is need to develop sheep and cows, particularly milk cows and cows used for both milk and beef, cutting back on the raising of horses, and stabilizing hog herds. Sheep and cows are grass-eating animals for whom savings can be effected in concentrated fields. They can make full use of grassy mountains and grasslands, and agricultural byproducts such as stalks and stems of plants, thereby improving the utilization rate of the products of photosynthesis. The grasslands have to be improved, since they are the material foundation for development of the animal husbandry industry. Where grasslands are inadequate, general methods should be adapted to local situations in trial rotational farming of field crops and pasture grass. Nowadays, the role of horses on farms is becoming ever smaller. Except for their use as draft animals, losses sustained for herds of horses in production should be converted to profits with all possible speed, and where losses cannot be reversed, the horses should be gotten rid of as soon as possible.

Recently hog production has declined in various degrees at numerous farms. This is a situation that must arouse attention. Opportunity should be seized to restructure hog herds. Particularly needed is restructuring of sow herds, with a culling of inferior breeds and an increase in superior breeds of sows, assuring a basic number of sows. In the development of hog production, the problem of losses has to be solved. Feed grains should be included among the "three keeps" in grain plans. Substandard grain used for feed should be priced according to its quality, and not allocated at the premium price paid for grain produced in excess of quotas. Pig manure used as fertilizer must also be priced; it should not be used without payment of compensation for it. Policies should be liberalized; breeding should be centralized and fattening dispersed; systems of responsibility such as calculation of remuneration on the basis of production should be instituted through adaptation of general methods of specific circumstances; and workers' households should be encouraged to raise hogs.

Full use should be made of local resources, and general methods adapted to local situations for the raising of ducks, chickens, rabbits, bees, deer, and fish.

Many units have sustained losses no matter whether raising hogs, cattle, or sheep. Reversing losses depends primarily on improvements in administration and management. The central problem is doing a good job of "specialized contracting, with calculation of remuneration being linked to production," or some other form of a system of responsibility for production. Carry out coordination of specialities under the principle of voluntary participation and mutual benefit.

Once a good job has been done in the animal husbandry industry, not only can livestock products such as meat, milk, eggs, and furs be provided the country, but a large quantity of organic fertilizer can be furnished to the farming industry to promote the development of agriculture.

Increase the Ratio of Forestry

In recent years, we have given priority to the building of shelter forests for farmland, grasslands, and rubber plantations. In windblown sand and arid areas, in particular, there should be more emphasis on construction of shelter forests and of forests to protect farmland. A good job should be done in the greening of the "four besides" [beside villages, roads, waterways, and fields]. Mountain slopes with a large gradient should be afforested in strips. Low-lying, desertified, and alkaline-saline places unsuited to the growing of agricultural crops should be planted to firewood forests. Where suitable, orchards, grapes, and woody plants to take the place of grain and oil-seed crops should be planted.

Readjustment of Agriculture and Land Reclamation Industries

New construction, continuation of construction, and expanded construction of agriculture and land reclamation industries should be conscientiously studied in accordance with the spirit of national readjustment, those being halted or curtailed that should be, and those being retained that should be.

In readjustment, agricultural byproducts processing industries and light textile industries should be developed; labor intensive industries and construction materials industries should be developed; and light industry market items should be increased. Machine industries should be readjusted and specialized cooperation should be promoted, the better to serve the mechanization of agriculture.

For those industries that have no sources of raw materials, whose goods find no markets, whose quality is shoddy and prices high, and that have sustained losses for a long time, decision should be made to close them, halt them, merge them, or convert them.

During the period of adjustment, we should base ourselves on restructuring and improvement of existing industrial enterprises, doing a good job of tapping potential, innovation, reform, filling in gaps, and linking parts to form wholes to give full play to the productive capacity of existing industrial enterprises.

It is recommeded that both inside and outside the agriculture and land reclamation system, and inside and outside provinces and regions, there be various forms of coordination under the principles of voluntary participation and mutual benefit. Attention should be given readjustment of benefit distribution relationships in processing industries and the farming industry, with appropriate return to raw materials producing units of profits from industrial plants. This can both avoid duplication of construction and can fire the enthusiasm of units that produce raw materials, the plants thereby "having enough to eat and run at full speed."

Make Up Deficits and Increase Surpluses

Attention to the work of making up deficits and increasing surpluses is one of the major ingredients in the implementation of readjustment programs by agriculture and land reclamation enterprises. We have made quite good headway during the past 2 years, but it is still necessary to realize that nationally agriculture and land reclamation system enterprises running deficits still amount to 40 percent of the total. During the period of readjustment, making up of deficits and increasing of surpluses should be done as soon as possible, a reduction by at least 50 percent occurring during 1981 to reduce below 20 percent the proportion of deficit enterprises. In 1982, the phenomenon of deficit enterprises should be virtually eradicated. Not to make up the deficits means continuation of the consumption of socialism, and it means no good readjustment has been made. Those deficit enterprises unable to reverse matters during the next few years should, on the basis of their different circumstances, be shut up, closed down, merged, or converted.

The profit-making agriculture and land reclamation enterprises that amount to 60 percent of the total number should summarize experiences, formulate practical and effective measures, and make full use of their manpower, equipment, and resources to advance deeply and broadly in production. Serious attention should be given to readjustment and restructuring work for those deficit units and deficit projects within profit making enterprises for further increases in the level of profits.

Responsibility Credited for High Output

Beijing ZHONGGUO NONGKEN [CHINESE AGRICULTURAL RECLAMATION] in Chinese No 4 1981 p 16

[Article by Special Correspondent Yu Liren [7411 6849 0086]]

[Text] Expansion of self-determination in enterprises, and institution of various forms of a system of responsibility for production has brought about a heartening scene for the agriculture and land reclamation system in Ningxia. Despite an 89,000 mu decline over the previous year in the grain crop area during 1980 on 14 state agriculture and pasture farms throughout the region, total output increased by 7 percent over the previous year to reach an all-time high. Oil seed crops overfulfilled plan by 46 percent, a more than fivefold increase over the previous year to create an all-time high as well.

Thirteen out of 14 agriculture and pasture farms had double increases in production of both grain and oil, except for one farm whose grain production declined. At the Lingwu, Lianhu, Balanghu, Nuanquan, and Qianjin farms every production team realized increased output of grain and oil.

In 1980, the Agriculture and Land Reclamation Bureau changed its former high quotas and extremely inflexible methods, the bureau handing down to farms only production quotas, quantities to be surrendered to the state, and profit and loss quotas. Acting under the guidance of these planned quotas, each farm was free to grow as much as it could and in the way it could, the farm itself deciding, as well, its crop distribution patterns, the matching of varieties, and management methods on the basis of realities, Pingjibao, and Quanjin farms retrenched their grain growing areas, taking out of grain production some land that was prone to drought or was highly alkaline, and expanding the area planted to oil seed crops, thereby both providing the state oil seed crops, decreasing costs, and increasing earnings.

Along with expansion of the self-determination of enterprises, the entire system also instituted different forms of a system of responsibility. The bureau instituted fiscal contracting for work with farms, guaranteeing no change for a period of 3 years. The farms instituted contracting for fixed quotas with their production teams, with rewards and penalties for overfulfillment or underfulfillment. Production teams instituted quotas for teams and placed responsibility on individuals, calculating workpoints on the basis of fixed quotas, and using workpoints as the basis for calculating rewards, also signing economic contracts at every level. For some small segments of farm work and care of small amounts of economic crops such as care of melons and vegetables, fruit orchards and livestock herds, and farmwork such as ridging, trickling of water, weeding, and harvesting, they instituted a system of responsibility of specialized contracting with "a team," and contracting for small segments of work with individual workers. They instituted systems of responsibility of various kinds, linking economic results with individual material benefits to change the situation of holding out an "iron rice bowl," and eating together from a "large common pot of rice," to produce a new atmosphere in which everyone was concerned about losses and profits, and careful calculations were made everywhere.

Building Small Hydroelectric Power Stations

Beijing ZHONGGUO NONGKEN [CHINESE AGRICULTURAL RECLAMATION] in Chinese No 5 1981 p 9

[Text] Guangdong Province agriculture and land reclamation area hydroelectric construction has fairly good achievements. In 1980, the reclamation area built and put into operation 15 small hydroelectric stations of above 40 kilowatts, with a total of 23 generating units, for a newly installed capacity totaling 6,664 kilowatts, a 1.12 fold increase over 1979, making 1980 the all-time high year for capacity installed. Now, the entire reclamation area has built and put into operation a total of 240 hydroelectric stations with a total installed capacity of 22,100 kilowatts, the amount of electricity generated amounting to one-third the total for the reclamation area to become a major integral part of the reclamation area's electric power industry. There are 15 small hydroelectric stations currently under construction with a designed installed capacity of 4,760 kilowatts. In 1980, newly added installed capacity was more than 600 kilowatts at the Jiachai, Dafeng, Yangjiang, Taiping, and Xiqing farms. Throughout the reclamation area, 15 farms have small hydroelectric stations with an installed capacity of more than 500 kilowatts, and at five farms it exceeds 1,000 kilowatts, providing electricity for 75 percent of production teams.

Small hydroelectric stations in the Guangdong Reclamation Area are dotted over a wide area like stars in the sky. They can provide electricity to mountain area farms, creating conditions for the electrification of illumination, the mechanization of rubber, processing of tropical economic crops, and agricultural byproducts, and the promotion of the development of agricultural production. At the Nanlin Farm in the eastern mountain region of Hainan Island, the small hydroelectric station had an installed capacity of only 45 kilowatts prior to 1974, and the entire farm depended on a small thermal electric plant for its electricity needs. In recent years, the farm has made full use of the water energy resources in the mountain area in vigorous development of small hydroelectric stations. Between 1975 and 1980, it built four hydroelectric stations of more than 100 kilowatts with an installed capacity of 1,135 kilowatts. They annually generate 2.5 million kilowatts of electricity for an annual saving in petroleum of 650 tons for a reduction in costs of more than 400,000 yuan. More than 200 pieces of power processing equipment, and more than 85 percent of production teams on the farm use the electricity. Formerly the Xiqing Farm had to pay 13,000 yuan monthly to the local electric power department. Last year, however, the farm's Yala River No 1 Hydroelectric Station generating unit was built and went into production to assure the electricity needs of the entire farm. Excess electric power is put on the electric grid. In this way, not only is a large saving in petroleum effected, but electricity payments of 13,000 yuan monthly are recovered.

In the development of small hydroelectric power stations, many units follow the procedure of building a single site, managing a single site, and making good use of a single site, thereby gradually consolidating small electric power generation, steadily increasing the utilization rate of the equipment and the number of hours electricity is generated annually to provide ever improving quality of electricity. At the Nanlin, Nanping, Dafeng, Xilian, and Nanmao farms, where small hydroelectric stations are fairly numerous, electricity management organizations have been set up for unified management of generation, supply, and use of electricity, use being made of every kilowatt hour of electricity.

Collective, Individual Economies on State Farms

Beijing ZHONGGUO NONGKEN [CHINESE AGRICULTURAL RECLAMATION] in Chinese No 5 1981 pp 11-12

[Text] Two articles have been published in the special column titled, "Exploration of Farm and Reclamation Economic Problems" in this issue. One of the articles discusses farm operation of a collective economy, and the other discusses household sideline occupations of farm employees.

Is a collective economy and an individual economy allowed to develop within a state farm? State farms are an economy under ownership of all the people, so is it better to run a homogenous economy under ownership of all the people, or is it better, under conditions in which the economy under ownership of all the people is absolutely dominant, to permit the development of a collectively owned economy and an individual economy, operating a heterogeneous varied economy? There is controversy about this in practice.

During a visit to a forest area in the northeast in 1962, Comrade Liu Shaoqi noted that there was no need for homogeneity, but that there should be heterogeneity. However, under the influence of the "leftist" mentality of the time, Comrade Liu Shaoqi's correct ideas were criticized as wrong. During the 10 years of catastrophe, in particular, the collective economy within state farms was subject to all kinds of restrictions, and the individual economy was cleaned out entirely. Non-staple food supply to employees, service trades, and employment of males and females coming of age were all handled by the farms, and this resulted in a passive situation that hampered the lives of employees, caused difficulties in finding employment, and increased expenditures by the farms.

Ever since the Third Plenary Session of the 11th Party Central Committee, numerous comrades have come to realize that diverse economies should be allowed to exist within the state farms, that the dependents, and sons and daughters of employees should be organized to operate a collectively owned system, and that a free hand should be given development of employee household sideline occupations and household livestock raising. Operation of suitable individual businesses by dependents, sons and daughters, and retired employees should also be permitted and supported, ect. Naturally, this is a matter of economic policy, and different views exist on this issue. We are planning to publish a series of investigation reports and conduct some discussion in this periodical on questions about the collective economy and the individual economy within farms, making use of opinions from all sources to gradually form a rather unified view. It is hope that farm management units, economic research units, and the broad masses of employees everywhere will be concerned and participate in this discussion.

Why Run a Collective Economy?

(1) Development of the objective situation forces us to run it.

Our state farms are not only an agricultural economic unit under the ownership of all the people, but also a relatively independent and complete society. In 1980, the problem of jobs for the workforce reached the point where something just had to be done about it. Mostly after large groups of educated youths had returned to cities, when some were recruited in order to maintain production, as soon as the doors were opened, people came running. As of May 1979, at the Qinglongshan Farm in Heilongjiang Province, in addition to the 3,217 employees, their family dependent workers had increased to 473, and relatives and friends of employees to 853. These plus the sons and daughters of employees brought the total social labor force to 1,326 people. Prior to 1979 these people were put to work at temporary jobs by the farm, but in 1979 after the farm instituted fiscal contracting for work, a problem appeared when the policy of simply taking care of them could no longer be followed. In order to solve the problem of employment for these more than 1,000 people, we began to run a collective economy.

(2) It is necessary to run it in order to improve the administration and management of farms.

In 1979 there were very many holes in the management of wages. Labor was used recklessly at great cost, and the total amount by which wages for the year exceeded the plan of 530,000 yuan amounted to the profit figure for the entire farm. Of the total, wages for temporary labor exceeded 400,000 yuan. On the other hand, the eating of "food from a large common pot," also created great losses. Because management did not keep apace in the animal husbandry industry, and because there was no sense of strong responsibility, losses ran to 160,000 yuan. Because no one managed corn and miscellaneous grains other than wheat and rice, and because farming was done in a slapdash way, year after year there was no harvest from planting, and annual losses amounted to more than 100,000 yuan. Therefore, organization of idle surplus people, and institution of specialized contracting with personal responsibility for profits and losses was imperative.

(3) Improvements in Employees' Lives Also Required Operation of the Collective Economy

As agricultural production develops, the lives of employees should steadily improve and increase. However, because we did not pay sufficient serious attention in the past, numerous debts are owing, and housing and road conditions are very poor. In the supply of some items for living, many things are lacking such as white spirits, beancurd, and soy sauce. "Guarding a wine shop but having no wine to drink, sitting on a pile of beans but hungering for beancurd, buying vegetable seeds in spring only to have to buy vegetables in the fall, growing vegetables year after year yet having no vegetables to eat, and going 100 li to get some soy sauce." Many of these circumstances could be solved by running a collective economy.

How We Run a Collective Economy

The collective economy we operate is under the leadership of the farm. The basic means of production are still owned by the farm. They form contracts with the farm, and institute specialized contracting with personal responsibility for profits and losses. Everything they do must serve the farm's production life; all production plans are made a part of the farm plan, and the farm is given a fixed proportional management fee.

(1) Organization Methods: The farm has set up a collective economy office specifically for the handling of this work. Each unit has one cadre in charge of the collective economy. Collective economy leaders are selected through democratic means and reported for approval to the farm's collective economy office. Conditions for participation are that one must be a dependent of a farm resident, a son or daughter, or some other able-bodied person. Financial affairs are under the control of accountants in each unit. All who do not participate in the collective economy organization will not be hired by any unit without exception.

(2) Operations: Mostly farming, plus some other things that serve produciton life. In agricultural production units, depending on the number participants, each perosn is apportioned 20 mu of land on which corn, miscellaneous grains, melons and vegetables, economic crops, and some soybeans, but no wheat may be grown. Mostly one farms and cares for the land himself, farming being done be a substitite when necessary. One may also contract the raising of livestock, contract the planting of saplings, plant trees for afforestation, or engage in team work during the busy season in agriculture.

Industrial sideline occupation units and farm personnel may, in additon to contracting the planting of melons and vegetables, also operate sideline occupations, contract for the building of project, or break rocks to repair roads.

(3) Economic Policies: Carrying out specialized contracting, independent accounting, personal responsibility for profits and losses, and the principle of to each according to work. At the time distributions are made, withholings must be made first and distributions then made, meaning the withholdings of sufficient to pay taxes, expenses for substitute farming, loans, and ordinary advances, followed by withholding of public accumulation funds and public welfare funds, each at a 5 percent rate, and 12 percent for management fees (10 percent going to the farm and 2 percent being turned over to the unit acting for the farm in management), and finally a distribution of profits.

Strict carrying out of price policies, principal products being uniformly purchased by the farm, the remaining products being freely marketed once plan has been fulfilled.

By way of supporting the collective economy, the farm will loan production funds for seeds, fertilizer, and tools, and will advance 0.80 yuan and 1/2 jin of grain for each day a person works.

Initial Effectiveness and Knowledge Gained

In 1980, our farm organized a total of 24 collective economic organizations in which 1,050 people were participants. They planted 11,000 mu to grain and beans, harvesting 2 million jin of grain and bean. They planted 2,750 mu of vegetables for an output of 1,550 tons of vegetables. They raised 833 pigs for a farm livestock income of 430,000 yuan. Income from the building of houses, quarrying of stone, repair of roads, making of alcoholic beverages, capital construction, and industrial sideline occupations totaled 109,000 yuan. In addition, earnings per workday in support of production teams (the farm paid from 1.6 to 1.8 yuan per person used) brought total earning to 613,000 yuan. After deductions of accumulation funds, benefit funds, and management expenses, net distributions amounted to 478,000 yuan, or an average distribution of 455.80 yuan per capita for the period March to October, a monthly wage of 56.98 yuan.

In the running of the collective economy, four satisfactions were achieved. The first was that those who engaged in collective production were satisfied. Their livelihoods were assured, and their incomes rose. Second, leadership cadres on all echelons were satisfied. Because the collective economy organizations had leaders and organized things, and because of the conscious contracting, cadres had a lot fewer worries. Third, the employees were satisfied. Both family members and relatives and friends now had satisfactory positions and definite incomes.

Family life improved markedly. Additionally, this group of people did not participate in year-end distributions of awards in production teams, so in 1980, each worker averaged an additional reward of 50 yuan. Fourth, the farms were satisfied. As a result of the organization of the cooperative economy, in 1980 the farms either realized savings in expenditures or increased income by 960,000 yuan, or one-fifth the total profits for the year.

Household Sideline Occupations

Beijing ZHONGGUO NONGKEN [CHINESE AGRICULTURAL RECLAMATION] in Chinese No 5 1981 pp 13, 7

[Article from Shihezi Municipal Economic Research Office, Xinjiang]

[Text] 1. Present State of Farms Involved in Household Sideline Industry

As a result of study and implementation of the spirit of the two documents from the CCP Central Committee on hastening the development of agriculture since the Third Plenary Session of the 11th Party Central Committee, the number of farms involved in household sideline industries has steadily increased. They are generally of the following several categories:

One is the family livestock raising industry, including the raising of hogs, sheep, rabbits, chickens, and ducks. Hog raising is most common, and hog raising is subdivided into two types. One is a system where farms, in order to assure delivery to the state of commodity pork and to assure pork for farm employees' personal consumption, have company size units raise commodity pork, and have the families of employees raise pork for personal consumption. The farm sells shaots and feed to the families of employees for the portion that they will raise. After the hogs have been slaughtered, the employees consume them themselves, the farm supplying no further meat. Any amount in excess of personal consumption needs may be sold to the farm at the national list price. The other way is to undertake no task for the farm or, in addition to the task, to buy shoats and feed by oneself and raise the hogs, handling the products oneself after slaughter. Raising chickens is also very common, and almost every family raises them, consuming the products themselves or selling a portion in the free market.

Second is the farming industry, the planting industry, and the gathering industry. Not counting the collectively organized May 7 dependents corps' farming tasks, the scant vegetables or the few trees grown in front or behind the houses of employees families alone are generally not commodities and provide no income. A small number of people also grow castor-oil plants and Chinese medicinal herbs. Family planting consists principally of use of willow branches to plait small baskets, or the use of corn husks to plait different kinds of baskets, extremely few of which are sold in markets. The gathering industry depends primarily on employees of company size units near mountain forests who use their days off to collect medicinal materials and mushrooms in the mountains. However, because of its conditional and seasonal nature, this is not common.

Third is individual small industries or businesses of a service nature. Running of small eateries, for instance, is supported by the farm with sales of wheat flour and vegetable oil. Additionally there are barbering, sewing, shoe repair, watch repair, bicycle repair, making of fine dried noodles, beancurd making, photography, embroidery, needlework, secret recipes handed down from generation to generation for curing illnesses, popping corn, and making cotton candy.

2. Understanding Farm Employee Family Sideline Industries

The Central Committee of the CCP noted with regard to the two documents on agriculture that people's commune member's family sideline industries are a necessary supplementary part of the socialist economy. This formulation fully applies to state farms. In terms of their economic form, farm employee household sideline occupations must belong in the category of simple commodity production; however, in terms of production relationships, they differ in nature from simple commodity production under conditions of private ownership. They are not products of a system of private ownership, but an economic component existing in the state owned economy whose characteristics are manifested in: (1) those workers engaged in household sideline industries are members of the farm; only an extremely small number are individual producers; (2) most of the time of employees is devoted to productive labor on the farm; running of household sideline industries can only be done in spare time or through the use of supplementary labor in the family; (3) the living expenses of employee's families derive principally from wages. Their grain, oil, and major staple and non-staple foods are provided by the state; family sideline industries are only a supplement; (4) the activities of employees engaged in family sideline industries and the dispositon of surplus products must abide by the farm's labor discipline and the state's policies and laws. From this it may be seen that by their economic nature, employee household sideline industries are an integral part of the socialist economic system, and are a "supplement" to the socialist economy. When Lin Biao and the "gang of four" were on the rampage, they termed a little sideline industry performed by farm employees as "taking the capitalist road," creating extreme confusion in edeology and in theory. Now it is necessary to clarify understanding and vigorously support employee development of household sideline industries.

Permitting development of farm employee household sideline occupations can allow full advantage to be made of the production capacity of surplus labor, can help develop production, increase earnings, and improve the people's lives. In the case of hog raising, for example, formerly all pork for consumption by employees was the province of the regiment for supply, and annual losses were very great. In 1979, losses on pork for consumption were 370,000 yuan. In 1980, losses from this quarter no longer existed, and each employee's annual pork consumption rose from the 6 kilograms of the year before to 12 kilograms.

Experience has shown that permitting and supporting farm employees to develop household sideline industries is a necessity in the objective realities of state farms. It is in line with production relationships and will definitely suit the nature of productivity, this objective economic law. It is advantageous to the country, to the unit, and to the individual.

3. In developing farm employee household sideline industries, the following several relationships must be handled well: (1) The relationship between "principal" and "ancillary". Farm employees must stick to their jobs and observe labor discipline, completing their work assignments within the stipulated time. This is the employee's "principal job." On this basis, use of extra time to undertake household sideline production activities with the help of labor in the family should be permitted. Excessive interference and restriction is not necessary. (2) The relationship between employee household sideline industries and sideline industries operated by the farm. Employee household sideline industries and farm operated sideline industries are the "two legs" of farm sideline production, and one cannot be emphasized at the expense of the other. Plans must be made with consideration given all factors concerned, suitable regulation done, and handling done properly. (3) The relationship between "liberalization" and "control." With the liberalization of policies by the party, employee household sideline industries have developed, the markets in city and countryside have become enlivened, and under these circumstances, it would be hard to avoid having some people exploit advantages for their own benefit and cause disturbances from within. Consequently, it is necessary to intensify control over labor and control over markets.

In the development of household sideline industries, some problems meriting attention have also appeared. For example, farm employees have bought between 40 and 50 motor vehicles. The employees use these vehicles to haul things for their businesses. This must inevitably affect their participation in the farm's collective production, and it must be halted and suppressed at the present stage. Motor vehicles already privately purchased must be handled in a satisfactory way.

Improvement in Living Conditions

Beijing ZHONGGUO NONGKEN [CHINESE AGRICULTURAL RECLAMATION] in Chinese No 5 1981 p 14

[Text] Under the guidance of the spirit of the Third Plenary Session of the 11th Party Central Committee, and along with growth in industrial and agricultural production and various economic construction endeavors, the standard of living of the 900,000 employees of the Xinjiang agriculture and land reclamation system has generally risen.

First of all, earnings have increased. Funds allocated for wages and as heating subsidies throughout the reclamation area last year, plus the total of 180 million yuan released as awards of various kinds, has meant an average increase in income to employees of 200 yuan per capita. Some regiments have exceeded this level.

Second has been improvement in living conditions. Last year the area used state funds and funds contributed by enterprises themselves to build a total of 737,500 square meters of workers dormitories, an average increase of 0.82 square meters per worker. The newly constructed worker's quarters are mostly of brick and wood construction, and are spacious and bright. Workers on some farms in the Bayingeleng Mongol Nationality Autonomous Zhou have moved into new houses where the area per dwelling averages somewhat more than 50 square meters.

Third, is an abundance of staple and non-staple foods. The proportion of fine grains [wheat or rice] in the diet of farm workers has risen from 20 to 30 percent to 50 percent. As the Shihezi reclamation area, it has also risen to 70 or 80 percent, and in some regiments it has risen to more than 90 percent. The supply of edible oil in many units has risen from 1 or 2 liang per month to from 5 liang to 1 jin or more. Meat supplies have also taken an obvious turn for the better, and this plus permission for workers to develop household sideline industries, raising poultry and livestock, has meant greater diversity of non-staple foods for workers.

Fourth is the development of welfare endeavors. Since last year, quite a few farms have built open air motion picture theatres and workers clubs. Some have built libraries and baths, and have surfaced roads with asphalt within the farms. Numerous out-of-the-way farm employee's families have erected wired broadcast facilities. Statistics show that funds used last year throughout the reclamation area for improvements in collective welfare facilities amounted to 40 million yuan, an average 45 yuan per worker.

9432
CSO: 4007/473

BRIEFS

AGRICULTURAL ANNALS--Beijing, 18 Jul (XINHUA)--"Annals of Chinese Agriculture 1980," the first agricultural annals published in China since its founding, will soon be off the press. Published by the Agricultural Publishing House, this annals, which totals approximately 1.2 million words, contains a number of important statistical figures for the past 30 years on agriculture, forestry, state farms and reclamation, farm machinery, water conservancy, aquatic production and meteorology. In the section "30 Years of PRC Agriculture," a series of articles about the accomplishments, major experiences and lessons of China's agricultural production are published. The annals also reflects China's agricultural progress and development of socialist new villages in recent years is also reflected in the sections "Important Agricultural Documents, Legislation and Regulations," "Agricultural Policies and Administrative Measures," "Agricultural News Reports and Press Commentaries" and "Agricultural Work Conferences and Agricultural Professional Conferences." [Beijing XINHUA Domestic Service in Chinese 0018 GMT 18 Jul 81]

FIRST VIRAL INSECTICIDE--Beijing, 21 Jul (XINHUA)--A viral insecticide which kills the bollworm, the moth larvae that feeds on and destroys cotton and 30 other crops, is being trial-produced by the Wuhan Institute of Virology under the Chinese Academy of Sciences. This is part of an effort by China's scientists to study biological control of insects, said a source at the academy's department of biology. China now uses chemical insecticides to control most insect pests. Because the chemicals can cause serious environmental pollution, research on biological control is being emphasized in China's institutes. Scientists at the Institute of Virology incubated bollworm eggs and bred the larvae under laboratory conditions. They then extracted the virus from the dead larvae. To this, they added an ingredient which attracts the live bollworm. Scientists began this research five years ago and the present production is China's first viral insecticide. Tests for noxiousness and etiology of the new insecticide have been done on guinea pigs, domestic rabbits, chickens, doves, bees, silk worms and gold fish. These animals showed normal growth and no abnormal pathological changes after exposure. Check-ups of personnel engaged in this work for years reveal no physical hazards. The viral insecticide was applied to 660 hectares of cotton fields at Jianghu farm in Hubei from 1976 to 1979 and tests were run in 1980 in 20 localities in 13 provinces and municipalities. Compared with a dozen regular chemical insecticides, the effect of the viral insecticide was much superior. [Text] [Beijing XINHUA in English at 0206 GMT 21 Jul 81]

NATIONAL SUMMER WHEAT MEETING--Between 25 and 30 March, a national academic discussion meeting on ecological and physiological research on summer wheat was held at Yuci City in Shanxi Province under the joint auspices of the Ecology Research Center of the Chinese Academy of Sciences and the Crop Genetics Institute of the Shanxi Provincial Academy of Agricultural Sciences. A total of 57 delegates from agricultural research units in 11 provinces and municipalities (or prefectures), and units concerned in academic institutions attended the meeting. The meeting received 25 research reports. Ma Shijun [7456 0013 7486], director of the Ecology Research Society and preparatory organizing head of the Ecology Research Center of the Chinese Academy of Sciences, sent a congratulatory letter to the meeting. Fifteen comrades made speeches at the meeting. Acting in a spirit of "let a hundred schools of thought contend," delegates to the meeting spoke freely in full expression of academic democracy, expressing views from the standpoint of different academic disciplines on the thrust of summer wheat research. The meeting acknowledged that from both the standpoint of production experience, and from the standpoint of basic theoretical research, the launching of ecological and physiological research work on summer wheat is of major significance. [Text] [Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 5 May 81 p 1] 9432

CSO: 4007/469

BRIEFS

EARLY RICE--As a result of fine field management work, Anhui Province's more than 10 million mu of early rice are growing very well, promising a bumper harvest of rice for 1981. At present all localities in the province are making preparations for the harvesting tasks. [OW221937 Hefei Anhui Provincial Service in Mandarin 1100 GMT 18 Jul 81]

YUEXI COUNTY PROGRESS--Yuexi County, Anhui, has made great achievements in socialist construction since the founding of the people's republic. By 1980, the county had built 67 small and medium-sized reservoirs, 16 irrigation pumping stations, putting more than 124,000 mu of farmland under effective irrigation, and leveled or improved more than 100,000 mu of land. The county also had by 1980 acquired more than 550 small and medium-sized tractors and a number of large tractors and trucks for agricultural use. The county's total grain output in 1979 was 2.5 times that in 1949. The county had no road more than 3 feet wide in the past. Now, 34 highways with a total length of 465 km have been built. The county has built 153 small hydroelectric power stations with a total installed capacity of 5,082 kilowatts. There are now more than 80 factories in the county, including farm machinery, smelting, cotton textile and paper factories. In 1980, the industrial output value of the county was over 16.65 million yuan. In 1949, there was only one middle school with an enrollment of 290 in the county. In 1981, there are 10 middle schools and 38 junior middle schools. [OW261309 Hefei Anhui Provincial Service in Mandarin 1100 GMT 22 Jul 81]

CSO: 4007/528

BRIEFS

WHEAT HARVEST--Lingtai County, Gansu Province, reaped a bumper harvest on its 450,000 mu of wheat fields this year. According to statistics, its output will be over 80 million jin, doubling 1980's figure. The per capita share will be about 300 jin. [SK260514 Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 25 Jul 81]

CSO: 4007/528

FAVORABLE REPORT ON PEASANT LIFE IN GUANGDONG REPORTED

Hong Kong ZHONGGUO XINWEN in Chinese 19 Jun 81 p 1

[Article: "Guangdong Provincial Chinese People's Political Consultative Conference [CPPCC] Deputy Chairman Zuo Hongtao [1563 3163 3447] Says Current Guangdong Rural Village Situation May Be Termed 'New Golden Age'"]

[Text] Guangdong peasants term the present situation in rural villages a "New Golden Age." This was the fundamental view obtained from a report back on a rural situation survey made to the provincial CCPCC Standing Committee Meeting, convened on 12 June by Guangdong Provincial CPPCC Deputy Chairman Zuo Hongtao.

The Guangdong Provincial Committee of the CPPCC organized a group of CPPCC members in May to go to villages, cities, and towns to gain an understanding of agricultural and industrial readjustment work. Four rural investigation teams headed by Provincial CPPCC deputy chairmen, Liao Siguang [1675 0138 0342], Ceng Tianjie [2582 1131 4634] and Chen Yilin [7115 0122 2651], and deputy secretary Chen Zhiqi [7115 1807 2601] visited 29 communes, 23 production brigades, and 14 production teams and visited some peasants' homes in Qujiang, Renhua, and Nanxiong counties in northern Guangdong, Yangjiang and Yangchun counties in western Guangdong, Gaohe and Xingmei counties in central Guangdong, and Xingning and Wuhua counties in the mountains of Guangdong.

Zuo Hongtao said that the impression we obtained was that the rural situation is very good, or as the peasants say, "This is the third golden age." They term land reform the first "golden age," and the 5 years from 1962 to 1965 the second "golden age." The visiting inspection teams believe that the outstanding symbols of this "golden age" in Guangdong rural villages are increased agricultural output, increased peasant earnings, lively markets, improved living, peace of mind, and high enthusiasm for production. The two mountain region counties of Xingning and Wuhua, despite floods and droughts last year, had increased grain outputs totaling more than 5 million jin and more than 80 million jin respectively. Output of economic crops such as peanuts, tea, and mushrooms showed fairly large increases, and new growth took places in forestry, sideline industries, and the livestock industry. In Qujiang county last year, peasant distributions of consumption grain and cash showed average increases over the previous year, and individual peasant savings increased by 20 percent over the previous year.

These four visiting inspection teams noted in their reports of investigation that the main reason for the emergence of such a fine situation in rural Guangdong this year were gradual elimination during the past several years of the influence of "leftist" thinking, readjustment of the agricultural structure, implementation of rural policies, and arousal of the production initiative of the peasants. Provincial CPPCC committee members participating in the investigation teams made known their ideas and recommendations on some new problems now existing in rural villages.

9432
CSO: 4007/504

BRIEFS

GRAIN CONFERENCE--The Guangdong provincial conference of grain bureau directors stressed that grain departments at all levels should pay attention to studying the new situation in the rural areas, solving new problems and implementing the grain policy so as to do a good job in procuring summer grain. Since the beginning of 1981, Guangdong has readjusted the proportion of procurement and surplus procurement, and has fixed the task of procurement for the coming 3 years. Various types of production responsibility systems have been practiced in the rural areas and the workload of storing grain in granaries is becoming heavier and more difficult. In carrying out summer purchases, we should do a good job in accounting. Since the task of summer grain procurement is very heavy, a good policy is required. Cadres of grain departments should understand these new situations and change their work styles so as to do a good job in procuring summer grain to the state. [HK030929 Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 21 Jun 81]

FOSHAN PREFECTURE FLOOD--Party organizations at all levels and the people's government of Foshan Prefecture promptly organized cadres and the masses to drain flooded fields and fight natural calamities, restore production and make up what was lost. Since 29 June until 1 July, there was heavy rain in all localities of Foshan Prefecture. Throughout the prefecture, 1.74 million mu of early crops, 120,000 mu of sugarcane, and 100,000 mu of peanuts were flooded; 700,000 mu of fish ponds were flooded and more than 1,000 villages were flooded. Many dykes and conduits were washed away. Four work teams were formed by agricultural, industrial, transport, water conservancy and financial departments; the responsible comrades went down to Kaiping, Enping, Zhongshan, Xinhui and Gaohe counties to help the local cadres and the masses fight floods. To promptly restore production after the natural calamity, Foshan prefectural CCP Committee convened an emergency telephone conference on the evening of 2 July. [HK110712 Guangzhou Guangdong Provincial Service in Mandarin 2330 GMT 3 Jul 81]

AIRCRAFT FOR AFFORESTATION--Two civil airplanes were used to sow forest tree seeds on more than 226,000 mu of bare mountains in Dan and other counties on Hainan Island between 22 and 29 May. They flew more than 60 sorties, overfulfilling the original afforestation plan by some 26,000 mu. [Guangzhou GUANGZHOU RIBAO in Chinese 8 Jun 81 p 1]

BUMPER COCOON CROPS--In the wake of last year's increased output, another bumper output was harvested this year from Guangdong Provinces first and second silkworm cocoon crops. Output totalled more than 131,800 dan, a 20 percent increase over the same period last year, the increase in output being 4.37 percent from the first crop. Beginning last year, Guangdong Province instituted a policy of awards for overfulfillment of cocoon production, and peasant enthusiasm for the growing of mulberry and the raising of silkworms has increased. New silkworm growing areas of Huazhou, Dongguan, and Zengcheng have readjusted their patterns of agricultural production, actively enlarging the area of mulberry plantings without impairing grain production. As of now, mulberry has been expanded over 40,000 mu throughout the province, 28,000 mu of it is spring mulberry, making it the year of the largest mulberry area since the founding of the People's Republic. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 22 Jun 81 p 2] 9432

CSO: 4007/504

BRIEFS

SILKWORM COCOON PROCUREMENT--Between January and May this year, the Guangxi region procured 9,858 dan of silkworm cocoons, 25.6 percent more than in the corresponding period of last year. The region has better natural conditions for planting mulberries and breeding silkworms than other places. [Nanning Guangxi Regional Service in Mandarin 1100 GMT 17 Jun 81]

SUGARCANE PRODUCTION--Since the 3d plenary session of the 11th Central Committee, Nanning has steadily developed the production of sugarcane. In 1980, there were 1.67 million mu of sugarcane growing in the region, with an output of 427,000 tons, an increase of 147,000 tons compared with the record in 1973. In 1981, the growing area of sugarcane increased by 20,000 mu over that of 1980. The climate of Guangxi is favorable for growing sugarcane. In the past few years, the regional CCP Committee and the people's government have stipulated a series of policies to promote sugarcane production. In May and November 1980, the regional people's government decided that sugarcane production should be linked up with grain production so as to increase the income of the peasants. Meanwhile, various kinds of responsibility systems have been established, which have in turn aroused the peasants' enthusiasm in growing sugarcane. Since the beginning of 1978, bases for sugarcane production have been set up in 108 communes, 523 brigades and 7,454 production teams. The establishment of these bases is advantageous to the implementation of policies and the promotion of advanced technology. [HK180947 Nanning Guangxi Regional Service in Mandarin 1100 GMT 22 Jun 81]

GRAIN DRIER SYMPOSIUM--On 18 and 19 June, the Guangxi Agricultural Machinery Bureau held an on-the-spot symposium of prefectural, municipal and county agricultural machinery bureau directors in Nanning on the popularization of grain driers. During the meeting, the representatives visited a grain drier in Yongning County. Xiao Han, regional CCP Committee secretary and (Wei Yiren), vice chairman of the regional agricultural committee attended the meeting and listened to the opinions of the masses on the grain drier. The damp weather in Guangxi very often causes rotting and germination of grain. To cope with the problem, since the beginning of 1978, the Chinese Agricultural Machinery Research Institute and Baise Prefectural Agricultural Machinery Research Institute have jointly trial-produced the 5-HE 25 S model and 5-HE 25 Y model grain driers. The grain driers have proved to be effective and will be widely used. [HK180840 Nanning Guangxi Regional Service in Mandarin 1100 GMT 22 Jun 81]

FISHERY DEVELOPMENT--Output of aquatic products in Guangxi region in 1980 was some 2.227 million dan, some 5 times greater than in 1950. The area devoted to fisheries in the region is some 150,000 kilometers and the area of beaches which can be used to breed fish is 1.17 million mu. The water surface of the rivers which can be used to breed fish is some 1.8 million mu. In 1980, the region bred some 2.59 billion fry. The region has built 8 freshwater fish bases, which produced some 95 million dan of fish commodities in 1980. [HK180840 Nanning Guangxi Regional Service in Mandarin 1100 GMT 29 Jun 81]

SOW, PIGLET BREEDING--Guangxi's rural areas have vigorously developed sow and piglet breeding. In the first quarter of this year, the number of sows kept in sties in Guangxi reached more than 634,000, an increase of more than 74,000 and up 13.26 percent compared with the same period of last year. To encourage collectives and commune members to breed sows, and in accordance with the spirit of the relevant documents of the central authorities and the practical situation in Guangxi, the Guangxi regional CCP Committee and the regional people's government formulated and implemented the policy and measures on developing sow breeding. For every sow raised by the commune members, the production team allocates an area of fodder plots equivalent to that for raising two pigs. Commune members who sold one or two litters of piglets in the village trade fairs last year will be exempted from the task of delivering one pig to the state. In addition, when the price of piglets in the village trade fairs falls below the stipulated price, the state foodstuffs departments will procure them at the stipulated price, thus protecting the interests of the commune members. [Nanning Guangxi Regional Service in Mandarin 1100 GMT 25 Jun 81]

WATER CONSERVANCY PROJECTS--Since liberation, Guangxi region has completed some 320,000 large and small water conservancy projects for agricultural purposes, some 80,000 of which are large and small reservoirs and ponds for storing water. Their total capacity is some 20 billion cubic meters. The installed capacity of electric irrigating and sprinkler irrigating projects is 550,000 horsepower. The region has some 12,000 hydraulic pumps and has repaired and built channels comprising a total length of some 48,000 km. The area of farmland with guaranteed irrigation irrespective of drought and floods at present is five times larger than in the initial period of liberation. With the substantial development of water conservancy projects, the region has greatly promoted agricultural production. The region's total output of grain in 1980 was 5.75 times greater than in 1950. The per capita grain output was 673 jin. The region's total output of sugarcane in 1980 was 9.4 times more than in 1950. [Nanning Guangxi Regional Service in Mandarin 1100 GMT 6 Jul 81]

CSO: 4007/528

BRIEFS

CHEMICAL FERTILIZER OUTPUT--Guizhou Province has used rich local deposits of phosphate, sulfur, and coal for active development of a chemical fertilizer industry, and now more than 60 large, medium, and small chemical fertilizer enterprises have been built throughout the province, chemical fertilizer production capacity standing at 2 million tons. Guizhou Province's front ranking producer of nitrogenous fertilizer, the Jianjiang Chemical Fertilizer Plant, a medium size enterprise, and two phosphate fertilizer producing enterprises, the Guiyang Hongyan Chemical Plant and the Zunyi Phosphate Fertilizer Plant, were built in 1958. Subsequently, a further group of medium and small phosphate and nitrogenous fertilizer enterprises were built in a planned way to bring about rapid growth of chemical fertilizer output. Up until 1964, Guizhou's chemical fertilizer output was less than 30,000 tons, but by 1966 it had increased to 210,000 tons. In 1978, the Guizhou Chishui Natural Gas Chemical Fertilizer Plant was built and put into production, and the province's chemical fertilizer output increased to 730,000 tons, exceeding 1 million tons in 1979. In 1980, it reached 1.49 million tons. Guizhou Province has given much attention to development of the local chemical fertilizer industry. Now two-thirds of the counties in the province have small chemical fertilizer plants, and their annual outputs amount to 40 percent of total chemical fertilizer output in the province. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 26 Jun 81 p 3] 9432

CSO: 4007/504

FARM INPUT, OUTPUT IN TIANJIN SUBURBS DISCUSSED

Tianjin TIANJIN RIBAO in Chinese 27 Jun 81 p 1

[Summary] Since liberation, farm input and output in the suburbs of Tianjin Municipality have increased as follows:

Input:

1. Large and medium-sized tractors from 4 in 1953 to 12,819 in 1980.

2. Percentage of farmland plowed by tractors from 0.1 percent in 1953 to 84.1 percent in 1980.

3. Average amount of electricity used per mu of farmland from 1 kilowatt-hour in 1950 to 96 kwh in 1980.

4. Average amount of fertilizer per mu from 1 jin in 1950 to 79 jin in 1980.

5. Percentage of farmland with good irrigation from 9.2 percent in 1949 to 81.7 percent in 1980.

Output: (1949 and 1980 figures in all cases)

1. Grain production from 465 million jin to 2.755 billion jin.

2. Oilseed production from 3.49 million jin to 55.75 million jin.

3. Vegetable production from 530 million jin to 2.234 billion jin.

4. Live pigs at year-end inventory from 126,200 to 1,009,600.

5. Sheep at year-end inventory from 39,900 to 363,300.

6. Large animals at year-end inventory from 143,900 to 211,000.

7. Aquatic products from 16,300 tons to 32,100 tons.

The gross value of agricultural products rose from 149 million yuan in 1949 to 1.498 billion yuan in 1980.

CSO: 4007/527

BRIEFS

TIANJIN AGRIPRODUCTS--Urban and rural agriproducts markets in Tianjin Municipality have become brisker. In the first 6 months of 1981, the volume of business was 70.28 million yuan, a 54.6 percent increase over the corresponding 1980 period. Its urban market sales were over 27 million yuan resulting in more than a 6-yuan per capita purchase value. [SK270702 Tianjin City Service in Mandarin 0030 GMT 27 Jul 81]

CSO: 4007/528

BRIEFS

GUSHI COUNTY BUMPER RAPE HARVEST--Gushi County reaped a bumper harvest of rape this year. By 12 June, the county had overfulfilled its quota for procurement of oil-bearing crops for the whole year by 2.93 million jin. The total output and per mu yield of the 80,000 mu of rape this year exceeded the previous highest levels. [Zhengzhou Henan Provincial Service in Mandarin 1130 GMT 18 Jun 81]

GOOD WHEAT HARVEST--By 10 June, Henan Province had reaped wheat on 62 million mu. Although production in some counties and municipalities dropped, the province reaped a good harvest of wheat. This good harvest was achieved after the people throughout the province had combated the most serious drought for 40 years. Dai Suli, provincial CCP Committee secretary and vice governor, praised the good harvest of wheat. [HK030931 Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 16 Jun 81]

ZHOUKOU PREFECTURE BUMPER HARVEST--Zhoukou Prefecture reaped a bumper harvest of wheat on 1.2 million mu this year and its total output was some 10 percent more than last year. [HK030931 Zhengzhou Henan Provincial Service in Mandarin 1130 GMT 18 Jun 81]

ANTIDROUGHT WORK MEETING--On 20 June, the Henan provincial people's government held a meeting on antidrought work. Responsible comrades of the departments concerned at the provincial level attended and Li Qingwei, provincial CCP Committee secretary and vice governor, presided. The comrades attending listened to the report made by a responsible comrade of the provincial antidrought command on combating drought and made arrangements for antidrought work and farming. They held that it is essential to do well in grasping field management and water control. The meeting called on the province to develop water conservancy construction quickly. [Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 22 Jun 81]

NATURE CONSERVATION CONFERENCE--The Henan conference on the examination and determination of natural conservation zones was held in Zhengzhou from 14 to 19 June. Members of the planning office of the Henan Provincial Agriculture Committee, the Henan specialized leadership group on the natural conservation zones and the comprehensive investigation team as well as concerned personnel of the Henan Provincial Science Committee, the Henan Scientific and Technological Association, the Henan Zoology Society, the Henan Botany Society and the Henan Forestry Society attended the conference. The participants seriously listened to detailed reports

made by the comprehensive investigation team on the natural conservation zones. The conference also discussed the catalogue of Henan's valuable and rare animals and plants under protection and formulated plans to first establish eight natural conservation zones which have a total area of 488,000 mu. The conference also suggested that the plans be written in the form of a document to be submitted to the central authorities for examination and approval and then immediately issued and implemented by the provincial government. [HK030931 Zhengzhou Henan Provincial Service in Mandarin 1130 GMT 24 Jun 81]

COTTON PRODUCTION CONFERENCE--From 26 to 28 June, the Henan provincial people's government held a conference, which was attended by responsible comrades in charge of cotton production. The conference analyzed the province's current situation in cotton production and looked into future measures for tending cotton fields. The conference called on governments at all levels to strengthen leadership over cotton production. Li Qingwei, provincial CCP Committee secretary and vice governor, and Cui Guanghua, vice governor, attended and spoke. On 28 June, the provincial people's government issued a circular on strengthening cotton field management and striving to reap bumper cotton harvest. [Zhengzhou Henan Provincial Service in Mandarin 1130 GMT 29 Jun 81]

GRAIN PRODUCTION--The masses in Zhoukou Prefecture, Henan Province, reaped 2.5 billion jin of grains from 7.2 million mu of land sown to summer-ripening crops this year. [OW121341 Beijing Domestic Service in Mandarin 1200 GMT 4 Jul 81]

GRAIN CONTRACT SYSTEM--Zhengzhou, 6 Jul (XINHUA)--Beginning in 1979, Henan Province adopted a unique method of state grain purchase from and supply to 15 poor counties. The method is: on the basis of the differences recorded in the previous 3 years between the amount of grain turned over to the state and the amount of grain supplied by the state, these 15 counties are each required to only turn over or receive the difference thus arrived at. Once the difference is determined, it will be in effect for 3 years. Statistics show that in 1980, owing to this contract system in dealing with the 15 counties, Henan saved a total of 170 million jin of grain and 1.29 million yuan in shipping expenses, a saving of 2.9 million yuan. [OW101439 Beijing XINHUA Domestic Service in Chinese 1138 GMT 6 Jul 81]

UNDERGROUND GRAIN SILOS--Zhengzhou, 7 Jul (XINHUA)--Peasants in 60 counties and cities of Henan Province are now storing grain in underground silos, according to an official of the provincial grain department. The local peasants began building underground silos in 1965. The experimental silos were based on experiences accumulated over a long period, particularly knowledge from the excavation of the Hanjia silo in Luoyang, he said. Tests show that wheat preserved in underground silos for 10 years has a germination rate of 97.8 percent and food made from the wheat taste almost the same as that made from newly produced wheat, the official said. Construction of a 500-ton underground silo costs only 60 to 80 percent that of a surface silo and the grain storage fee is a quarter of that for house type granaries, he said. A recent meeting here sponsored by the State Scientific and Technological Commission, the State Planning Commission, the Ministry of Food and the Ministry of Finance, said that Henan's underground silo plan can be adopted nationwide. [OW101439 Beijing XINHUA in English 0106 GMT 7 Jul 81]

WHEAT HARVEST--Zhengzhou, 8 Jul (XINHUA)--Henan has reaped a bumper wheat harvest this year despite the serious drought conditions which have troubled the province. Total wheat output reached more than 19 billion jin, up some 1 billion jin from the 1980 figures. To celebrate the event, firecrackers were set off by the commune members and movies were shown. As a result of the good harvest, commune members were enthusiastic in paying wheat tax to the state. By 24 June, they had turned in 2.62 billion jin of summer grain to the state, accounting for 82 percent of the 1981 requisition and purchase quota. [OW130555 Beijing XINHUA Domestic Service in Chinese 0109 GMT 8 Jul 81]

NANYANG PREFECTURE AGRICULTURAL PRODUCTION--A big increase in agricultural production was reported for Nanyang Prefecture, Henan, this summer. The prefecture's total summer grain output reached 2.52 billion jin, or 480 million jin more than in 1980. As of 6 July, some 473 million jin of summer grain had been delivered to state granaries. The production of oil-bearing crops also registered phenomenal growth this summer with rapeseed output reaching 280 million jin, an all-time high record for the prefecture. [OW261337 Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 22 Jul 81]

WHEAT HARVEST--Despite a disastrous drought this year, Henan had a bumper wheat harvest. Total output of wheat was more than 19 billion jin, an increase of approximately 1 billion jin over last year. The harvest is second only to the 1979 harvest and is the second bumper harvest year since liberation. As of 24 June, 2.62 billion jin of summer grain has already been put into granaries. This accounts for 82 percent of the state procurement task. [Beijing GUANGMING RIBAO in Chinese 9 Jul 81 p 1]

CSO: 4007/527

SPREAD OF HYBRID RICE REPORTED

Wuhan CHANGJIANG RIBAO in Chinese 13 Jun 81 p 1

[Article: "Wuhan Suburban Counties Shows Remarkable Results in Increased Output Through General Promotion of Hybrid Rice"]

[Text] Wuhan's suburban counties have won gratifying economic results from active promotion of hybrid rice. This year the area sown to hybrid increased again over the previous year. Right now sowing of the single season late crop is nearing an end, with hybrid rice accounting for more than 90 percent of it.

Hybrid rice is one of China's major discoveries in agricultural science. Hybrid rice produces high yields of superior quality, producing between 100 and 150 jin per mu more than conventional rice, and is well received by the peasants.

Wuhan began to promote hybrid rice in 1976 when somewhat more than 800 mu were test planted during the first year, with success everywhere. During the second year, the area was expanded to 80,000 mu, again with the anticipated results, and hybrid rice received general acclaim. In the third year, 1978, it developed with a single leap to 390,000 mu, and though this year's single season hybrid rice encountered damage from sustained high temperatures and had a high rate of empty husks, which reduced yields somewhat, tremendously increased output was harvested from the hybrid rice that was planted as a late crop in a double crop system, making up for the other crop and still increasing output by more than 32 million jin. During the past several years, agricultural scientists and technicians and comrades in production units throughout the city have jointly summarized experiences and lessons in the growing of hybrid rice, and have written up to 100 articles, and reports on experiments, combining theory with practice, as a result of which hybrid rice has steadily spread in the suburbs, and currently the entire city has become a hybrid rice planting technical corps, which has figured out the hybrid rice combinations suited to natural conditions in this locale.

The spread of hybrid rice has won remarkable economic benefits. Statistics show 5 years of accumulated planting of 980,000 mu of hybrid rice have increased production of paddy by 114 million jin.

9432
CSO: 4007/498

SOIL TESTS USED TO DETERMINE KINDS, RATES OF FERTILIZATION

Wuhan HUBEI RIBAO in Chinese 19 Jun 81 p 1

[Article: "Benefits Derived from Soil Survey; Huanggang County Saves 680,000 Yuan on Chemical Fertilizer for Early Rice in a Single Season"]

[Text] Following a soil survey in Huanggang County, fertilization was prescribed for large area early rice production on the basis of soil differences. This year the entire county prescribed the fertilization of 150,000 mu of early rice. New roots were numerous; plant growth was strong, tillering was rapid, and young panicles developed early to provide a framework for a bumper harvest. More than 60,000 mu of cold waterlogged fields and muddy fields had fertilization prescribed, and measures for the opening of drainage ditches were adopted, with the result that growth of seedlings has exceeded that of last year. After Huanggang County peasants adopted this sensible method of applying fertilizer, for a single season early rice crop alone they saved more than 680,000 yuan on fertilizer.

Tens of pedologists and agricultural scientists and technicians from all over the province made on-site tests in Huanggang County. They affirmed that prescribed fertilization would be a good way to increase per unit yields and lower costs, and application of the results of a soil survey would advance scientific farming.

Prescription fertilization was proposed by the Huanggang County agricultural scientists and technicians on the basis of field experiments and following compilation of data on the soil's content of major nutrients and crop requirements of nitrogen, phosphate and potash. Different kinds of soil and different fields were fertilized with different quantities of fertilizer, and different proportions of nitrogen, phosphate, and potash were also applied to gradually build up files that could be applied to the fields. Use of such methods greatly increased the fertilizer utilization rate. According to preliminary statistics, in the county's use of fertilizer for the early rice crop this year, nitrogen was one-third less during the same period last year, and phosphate and potash greatly increased. This was because 89 percent of the fields in the county were deficient in phosphate, and 45 percent were deficient in potash. As a result of the sensible application of fertilizer, more than 680,000 yuan was saved on chemical fertilizer for the single season of early rice as compared with the same last year.

9432
CSO: 4007/502

RURAL ECONOMIC ROLE OF COMMUNE, BRIGADE ENTERPRISES EXAMINED

Wuhan HUBEI RIBAO in Chinese 22 Jun 81 p 1

[Article: "Party Policies Convey Brilliant Prospects for Commune and Brigade Enterprises. Development of Hubei's Commune and Brigade Enterprises Plays Major Role in Making the Rural Economy Prosper"]

[Text] On the eve of the celebration of the 60th birthday of the Chinese Communist Party, prefecture, municipal, and county commune enterprise bureau directors attending a provincial commune and brigade enterprise forum linked achievements in the development of commune and brigade enterprises in Hubei Province in an enthusiastic eulogy of the party's brilliant leadership, and determined to continue to carry out the party's programs and policies to hasten development of commune and brigade enterprises to make the rural economy prosper further.

For the past several years, all echelons of the party organization in Hubei Province have diligently carried out a series of programs and policies from the CCP Central Committee on the development of commune and brigade enterprises to assure that commune and brigade enterprises would move ahead in the midst of readjustment and improve in the midst of restructuring. In 1980, the province had more than 11,800 commune and brigade enterprises employing 1,526,000 people, and with a completed output value of 2.33 billion yuan, 1.8 times that of 1975. Between January and May of this year, output value of commune and brigade enterprises again increased 14.8 percent over the same period last year. The position and role of commune and brigade enterprises in the national economy is becoming ever more remarkable.

Gradual changes in the structure of Hubei Province's rural economy, and consolidation and strengthening of the collective economy. In 1980, total earning of the province's commune and brigade enterprises as a proportion of total income of the three-tier rural economy rose from 12 percent in 1975 to 27 percent. Commune and brigade enterprises fixed assets amounted to 2.07 billion yuan, a 1.25 fold increase over 1975.

Provides the funds and the means of production for development of agriculture. During the 5 year period between 1976 and 1980, profits realized by commune and brigade enterprises that were used for the capital construction of farmland, the purchase of farm machinery, and the support of poor brigades totaled more than 500 million yuan, or more than 100 million annually, more than three times the amount provided annually by the state during the past 2 years as investment in

agriculture in Hubei Province. Additionally, commune and brigade enterprises shouldered responsibility for production of medium and small farm implements and for the manufacture and repair of farm machines, annually providing agricultural production with more than 30 million medium and small farm tools made of iron, wood, and bamboo, and a like amount of farm machine spare parts, pesticides and fertilizer.

Provides good for city and countryside markets and for export in foreign trade. The province's commune and brigade enterprises produce about 3,000 different kinds of goods, most of which are goods for daily use needed in the life of the people such as knitwear, clothing, shoes, and hats, and bamboo and wooden furniture, "making good omissions and deficiencies, and filling in the gaps to complete a chain of goods" for markets. Arts and crafts and native products produced by commune and brigade enterprises enjoy ready sales in international markets. According to incomplete statistics, output value of foreign trade export goods produced by the province's commune and brigade enterprises amounted to more than 28 million yuan.

Accumulates capital and provides a certain amount of raw materials, fuels, and energy for the state. During the 5 years between 1976 to 1980, the province's commune and brigade enterprises provided the state tax revenues of more than 370 million yuan of which the revenues tendered during the 1980 amounted to 92.57 million yuan, or 6.6 times the 14 million yuan that the state provided for support of commune and brigade enterprises. Commune and brigade enterprises-produced raw coal and gold was 30 percent of the provice's total output, and iron ore, sulfur, and small hydroelectric installed capacity amounted to more than 40 percent; brick and tile output amounted to 60 percent.

Increases the level of distributions to commune members. Statistics for the last 4 years show that wages returned to commune and brigade enterprises amounted to more than 1.08 billion yuan. In terms of the province's agricultural population, this averages somewhat more than 27 yuan per person. In 1980, in the 53 production brigades in the province where the level of distributions was above 300 yuan, income from commune and brigade enterprises amounted to more than 50 percent the total income.

Opens a new avenue of employment for the rural workforce, and promotes development of rural cultural, educational, and collective welfare endeavors.

In short, development of commune and brigade enterprises has unfolded a glorious and splendid prospect for gradual narrowing of differences between city and countryside, for the building and development of agriculture, and for rich and populous rural villages. Moreover, practice has shown that without the leadership of the party, and without the guidance of the party's correct line, programs, and policies, there would be no development of commune and brigade enterprises, and no prospering of the rural economy. Paricularly important was the Third Plenary Session of the 11th Party Central Committee, which proceeded from the realities of national life in China to make development of commune and brigade enterprises a major measure for enlivening the rural economy whereby 800 million peasants could become wealthy with all possible speed. The Third Plenary Session's two documents on development of agriculture noted that "People's communes must actively operate commune and production brigade enterprises in a planned way in accordance with local resources and social requirements, and while assuring a good job of agricultural production.

"Whatever agricultural by products can be processed in rural villages in accordance with rational economic principles should gradually come to be processed by commune and brigade enterprises." They also asked that "commune and brigade enterprises should have a great development." These important instructions and the stipulations of a series of policies played a major role in eradicating "leftist" influences, and in raising the understanding of the people about the importance and necessity of developing commune and brigade enterprises, becoming a powerful force in the vigorous development of commune and brigade enterprises in Hubei Province. The recent 16 regulations from the State Council on national economic readjustment of commune and brigade enterprises fully affirmed that commune and brigade enterprises are a major integral part of the rural economy, and are in keeping with the overall direction of development of the rural economy. They put forward the fundamental principles and requirements for the readjustments and restructuring of commune and brigade enterprises. So long as all levels of the party organization further strengthen leadership, and proceed according to regulations and from the requirements of the macro-economy to diligently readjust and restructure, on the basis of the characteristics and existing problems in commune and brigade enterprises, new development will inevitably occur in the commune and brigade enterprises of Hubei Province.

9432

CSO: 4007/502

BRIEFS

RAPESEED PROCUREMENT--By 25 June, Hubei Province had purchased 1.23 million dan of rapeseed. This was 11.8 percent more than the target set for this year and surpassed the record for last year's corresponding period by 700,000 dan. [OW290149 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 26 Jun 81]

ANIMAL HUSBANDRY--A Hubei provincial conference on animal husbandry work concluded in Wuhan on 27 June. Over 250 representatives from relevant units in the province attended. Ren Zhonglin, deputy secretary of the provincial CCP Committee, and Shi Chuan, standing committee member of the provincial CCP Committee and vice governor of Hubei, spoke at the conference. The conference discussed the development of hog and cattle breeding, the responsibility system for animal husbandry, the building of veterinary stations and the raising of hogs, cattle, sheep and rabbits by commune members' families. [OW101439 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 28 Jun 81]

GRAIN PROCUREMENT--By 10 July Hubei Province had procured 1.414 billion jin of summer grain, topping the same period last year by 440 million jin and overfulfilling this year's summer grain procurement plan. [OW200555 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 15 Jul 81]

FLOOD PREPARATIONS--An unusually high flood peak will happen on the section of the Jingjiang in Hubei Province on 19 July. On 14 July, the provincial party committee held an emergency flood-prevention meeting, which urged counties and municipalities on the banks of the Changjiang to heighten their vigil and focus their attention on preventing floods. It is forecast that at 1400 on 18 July, the flow capacity of rivers in Yichang will be 70,000 cubic meters per second with water level at 55.2 meters. At 1100 on 19 July, water level in Shashi will reach 44.4 meters and flow capacity will reach 56,000 cubic meters per second. The provincial party committee has decided to set up a headquarters for combating floods at the frontline of the Jingjiang. The Wuhan military region, the Wuhan air force and the Hubei provincial military district have made plans for supporting the antiflood struggle. [OW200555 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 15 Jul 81]

CSO: 4007/528

BRIEFS

TOBACCO TAX--Tax will be reduced for the above-quota tobacco sold to the state this year, according to a circular issued by the Hunan provincial people's government recently. According to the circular, 61 yuan of tobacco tax will be reduced for each 100 jin of above-quota tobacco sold to the state. The circular also stressed that all areas must strengthen management of the tobacco market, that no other departments than authorized supply and marketing departments are allowed to purchase tobacco, that all tobacco-producing units may not sell their tobacco to private sectors before they have fulfilled their quotas, and that serious speculation on tobacco must be punished according to law. [Changsha Hunan Provincial Service in Mandarin 2300 GMT 27 Jun 81]

EARLY RICE--As of 9 July, Hunan Province had harvested 1.2 million mu of early rice. [Changsha Hunan Provincial Service in Mandarin 1100 GMT 10 Jul 81]

IRRIGATION CIRCULAR--The Hunan provincial people's government issued a circular on 10 July calling on various localities to strengthen the management in the use of irrigational facilities. The circular asked people to refrain from growing crops on levees or aquatic plants in irrigational canals. It also urged them to protect water conservancy facilities. [OW130555 Changsha Hunan Provincial Service in Mandarin 1100 GMT 12 Jul 81]

WATER CONSERVANCY MEETING--The Hunan provincial water conservancy department recently held a province-wide meeting in Changsha on water conservancy work. The meeting called for efforts to strengthen management in the use of irrigational facilities. It noted that only 75 percent of the farmland in Hunan was well irrigated and only 50 percent of the irrigational canals were put to use effectively. [OW130555 Changsha Hunan Provincial Service in Mandarin 1100 GMT 12 Jul 81]

FLOOD PREVENTION--In view of heavy rainstorms and high flood peaks in the upper reaches of the Changjiang and Sichuan Province, Hunan Province's Changde, Yiyang and Yueyanjg Prefectures are actively reinforcing dangerous sections of dykes, preparing flood prevention material and rushing in harvest of the ripening rice and other economic crops. According to forecasts of observatories in the province, heavy rain could coincide with the arrival of flood waters from the upper Changjiang. The Hunan provincial CCP Committee held an emergency meeting on 14 July and worked out measures to combat catastrophic floods. The meeting called for mobilizing the cadres and people to fight the impending floods. [OW200555 Changsha Hunan Provincial Service in Mandarin 2300 GMT 16 Jul 81]

HOG PRODUCTION--Hunan Province has made continuous, steady development in the production of hogs in 1981. As of the end of June the province had purchased a total of 5.25 million head. Compared with 1980, this number is about the same but the average weight per hog is 8.6 jin heavier, making up an actual increase of over 200,000 head. At the same time, the amount of pork sold to places outside the province was over 43,600 dun, or 1.2 times that in the corresponding period of 1980, overfulfilling the yearly task by 8 percent. [OW221855 Changsha Hunan Provincial Service in Mandarin 1100 GMT 18 Jul 81]

EGG PRODUCTION--Huayuan County, Hunan Province, has purchased a total of over 16,000 dan of fresh eggs in the first 6 months of 1981, fulfilling 132.4 percent of its yearly task. The county has a population of 200,000. [Changsha Hunan Provincial Service in Mandarin 1100 GMT 18 Jul 81]

XINGXIANG COUNTY AGRICULTURE--The total grain output in Xingxiang County, Hunan, in 1980 increased by 160 million jin over that in 1977. In 1980, the county's average per-mu grain yield was 1,200 jin, and the average income of commune members was 105 yuan. [Changsha Hunan Provincial Service in Mandarin 1100 GMT 23 Jul 81]

AGRICULTURAL CREDIT--As of the end of last June, rural banking facilities in Hunan Province had extended to commune members agricultural loans totaling 990 million yuan, 18.7 percent increase over the same period last year. [OW261549 Changsha Hunan Provincial Service in Mandarin 1100 GMT 23 Jul 81]

CSO: 4007/528

BRIEFS

HYBRID RICE EXPANDED--This year the hybrid rice area of Jiangsu has been expanded by 1 million mu to a total of 10.6 million mu, or 29 percent of the total multiple cropping rice acreage. [Nanjing XINHUA RIBAO in Chinese 5 Jul 81 p 1]

WUJIANG COUNTY HARVEST--Wujiang County, Jiangsu Province, began harvesting its 490,000 mu of early rice on 23 July. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 23 Jul 81]

CSO: 4007/528

BRIEFS

NANCHENG COUNTY RICE SEEDS--Nancheng County, Jiangxi, has procured 7.5 million jin of fine-strain early rice seeds for use next year. It is now carrying out field management on 12,000 mu of good-seed farmland. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 16 Jul 81]

CSO: 4007/528

BRIEFS

WHEAT HARVEST--Despite severe droughts, Shandong harvested a bumper wheat crop this year. Preliminary figures showed that the province's 52.6 million mu of wheat yielded 15.94 billion jin, an increase of more than 500 million jin over last year; yet this year's total wheat acreage was 3 million mu less than the previous year and the yield of wheat crops in some mountainous areas registered a lower output or no yield at all. As of 5 July, 2.71 billion jin of summer grain were procured by the state. This year's summer grain procurement plan calls for a total of 2.8 billion jin. [Jinan DAZHONG RIBAO in Chinese 9 Jul 81 p 1]

PRAWN LARVAE BREEDING--Jinan, 15 Jul (XINHUA)--Shandong Province has artificially bred 1,070 million prawn larvae so far this year, a fivefold increase over 1980, according to the provincial aquatic department. Shandong's prawn-farming area increased from 5,000 hectares last year to 8,000 hectares. Larvae were shipped to Jiangsu, Shanghai and Liaoning. Shandong Province has large tracts of beaches suitable for prawn artificial breeding. [OW200251 Beijing XINHUA in English 0804 GMT 15 Jul 81]

CSO: 4007/528

PROBLEMS, PROPOSALS ABOUT MILLET PRODUCTION EXAMINED

Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 5 May 81 pp 13-15

[Article by Zhang Huozhan [1721 3172 1455], Taiyuan Municipal Forest Bureau: "Problems With and Proposals for Improving Millet Production"]

[Excerpts] China is a country in which the millet growing area is fairly large. In 1979 the area sown to millet nationwide was 62,589,000 mu, and output totaled 12.25 billion jin for yields of 196 jin per mu. Yields per unit of area and total output amounted to about 4 percent and 3 percent of grain crops.

Distribution of millet is extremely widespread in China. It is planted from the banks of the Heilong Jiang in the north to the foot of the Wuzhi Shan in the south, and from the shores of the East China Sea in the east, to the western plains in the west. Its major area of production is 32° - 48° north latitude and 103° - 130° east longitude. A substantial amount of it is grown from north of the Huai He to the Heilongjiang area. Shanxi Province is one of the major millet growing areas, with an 83,584,000 mu area sown to it in 1979 for an output totaling 1.861 billion jin, and a yield of 223 jin per mu. The area sown to millet was 15 percent of the total area sown to grain crops in the province, and output totaled 12 percent of the province's grain production.

2. Problems in the Production of Millet in Shanxi Province

(1) Decline in growing area and irrational distribution

During the period immediately following Liberation, the area sown to millet in Shanxi Province was 13 million mu. During the late 1950's, it declined to about 10 million mu; during the 1960's, it dropped to 9 million mu; and during the 1970's, it fell to 8 million mu. Because of irrational distribution and the failure to make the most of advantages, corn and gaoliang have replaced millet on many infertile hill slopes, and their outputs are, contrarily, lower than for millet.

(2) Loss of traditional experience in growing millet

China is a country of intensive farming methods where, for a long period of time, the masses have had extremely abundant experience in the growing of millet, as

for instance, in careful preparation of the soil, preserving moisture to fight drought, and in maintaining full stands, as well as in the early thinning of seedlings, guarding against missing seedlings, much cultivation, deep cultivation, obtaining sturdy seedlings, timely clearing of soil from around plants, banking earth up high around plants, guarding against lodging, and such traditional experience. During the past several years, all this has been lost. Some people even imagine that these are methods of small scale agricultural production that are not worth advocating, which is clearly a very lopsided view.

(3) Small superior variety area, and few hardy varieties.

In general superior varieties of millet or intervarietal hybrid varieties have not strikingly increased yields in the way that corn and gaoliang hybrids have. Generally speaking, millet varieties are highly sensitive and limited in their adaptability, and this plus the lack of hardy varieties means that in comparison with other crops, the area over which superior varieties have been promoted is relative small. In numerous places it is still the peasant varieties that are dominant. According to 1979 statistics, the area of spread of superior millet varieties in the province amounted to only 41 percent, while the area of spread of superior varieties of corn, gaoliang, and wheat was more than 90 percent. Explaining the current not very high level of millet breeding in Shanxi Province is that new varieties cannot withstand the test of practice. Furthermore, in promoting superior varieties, work to prevent mongrelization and to protect purity has been neglected. In some communes and brigades, mixing and degeneration of varieties is serious.

(4) Serious situation of missing plants of dryland millet in hilly regions.

Farming of dryland millet in hilly regions of Shanxi Province is rough and ready, and frequently plants are missing, or the soil around plants is cracked. In addition, most mountain area millet varieties are of the large spike type, but the people have a custom of "a few plants so that large spikes will be put forth." The plants that are left are always inclined to be spindly, and less than 10,000 or even only 5,000 or 6,000 plants per mu are allowed to grow. This is a major problem with dryland millet.

(5) Serious spindling and lodging of flatland wetland millet

In Shanxi Province, flatland wetland wheat tends to be planted densely; field care is not properly maintained; and fertilization lacks sensibleness, so millet fields are not well ventilated nor can light permeate them well. Stems and leaves luxuriate and the space between plants is closed giving rise to spindling, serious lodging in the late season and an increase in the empty glume rate.

(6) In some areas, millet diseases and insect pests are on the rise again.

Because of the loss of the effective control and prevention measures that had formerly been disseminated, some diseases and insect pests are on the rise again. Downy mildew, for example, had a plant occurrence of less than 5 percent for many years in the past, but in some communes and brigades, it has risen again to around 20 percent in recent years. During the early 1960's, the soil was treated with

insecticide to control borers in flatland areas, and this substantially controlled the damage they caused. In recent years, however, these borers have run wild, and the rate of damage to plants runs as high as 40 percent and more. Stem flies are also seriously threatening summer millet production in some areas.

3. Proposals for Developing Shanxi Province's Millet Production

(1) Sensible distribution and a constant area.

Shanxi Province located on the Shanxi-Shaanxi loess highlands where the terrain is high and arid, the climate cold, the frost-free season short, and the annual volume of precipitation between 400 and 500 millimeters, most of it concentrated during the 3 months of July, August, and September, is suitable for the growth and development of millet. We must make the most of strengths while avoiding weaknesses, and turn advantages to use for an increase or stabilization of the millet growing area in the mountains to the east and west, in the nearby hilly dryland areas, and in Xinxian, and Yanbei prefectures to have millet account for from 20 to 30 percent of the grainfield area.

In recent years quite a few communes and brigades have changed their system of farming, intercropping with wheat in the fall, or planting corn and millet in strips in fields. However, since millet's light requirements are extremely sensitive, planting of corn and millet in strip fields is extremely disadvantageous for the growth and development of the millet. We advocate the flatland culture method of millet in two crops, or else promotion of the intercropping of wheat and millet as was done in the Jinci area of Taiyuan City. In southern and south-central areas, where the quantity of heat suffices, communes and brigades having the requisite water conservancy conditions should expand their summer millet area. Stabilizing the millet area of the province at 8 million to 10 million mu would substantially satisfy the needs of the people's livelihood.

(2) Serious attention to the promotion of research results and advanced experiences.

The 1978 provincial agricultural science conference affirmed a group of research results on millet, but we have not given sufficiently serious attention to their promotion. Today some results are still held up at their point of origin. In the realm of varieties, for example, the Jingu numbers 1 through 11 region superior varieties approved by the Provincial Varieties Assessment and Approval Commission should be actively promoted, and their area of cultivation expanded on the basis of the zoning proposals of the Provincial Seed Company. At the same time, a good job should be done of purification and rejuvenation of superior variety Baisui Suixing to take full advantage of the variety's increased yields. In the field of cultivation, there is the high yield cultivation technique for millet called "five joys and five fears," the vigorous turning up of the soil in autumn and the three-moisture preparation of the soil practiced in Jinzhuang in Huguan County, Wuhouli's "double natured five soils" for fighting drought and protect seedlings, the "Meihualou" millet of the Xiazhangzhao Brigade in Yangquan, application of mixed manures (40 percent donkey and horse manure, 40 percent cogongrass manure, and 20 percent pig and miscellaneous manure) on millet by the Jianziwan Brigade of Taiyuan City, the gorge planting methods, and the "four earlys and one close" culturing techniques for millet practiced in Hebei and Henan, all of which are successful experiences suited to the characteristics of this province, which should be diligently spread.

(3) Dryland millet requires increase in soil fertility and increase in density.

About 70 percent of the millet grown in Shanxi Province is on drylands in the hills and mountains where the soil is infertile and its organic content less than one percent. A beginning should be made by increasing soil fertility through large plantings of green manure, rotationally cropping millet and grass or millet and beans, or rush planting a crop of rape before the millet has been sown. Once soil fertility has been increased, between 10 and 20 percent more seedlings per mu can be planted, with no fewer than 15,000 individual seedlings per mu.

(4) For flatland wetland millet, the distance between rows should be suitably widened to reduce density.

In view of the problem of wild growth and lodging of flatland wetland wheat, experiments con ducted everywhere show a need for changes in planting methods. Distance between rows should be increased from 6-7 cun to 1 chi, or else large and small rows should be planted (large rows being 1.2 chi, and small rows being 8 cun), or else promote "meihualou" millet (rows being 1.2 chi apart, and a sowing width of 4 cun) or gulch planting methods to solve the problem of competition for ventilation and penetration of light. In determining the density of seedlings, a rational density of seedling colonies will have to be found on the basis of varieties, fertility of the soil, and planting methods. A rather scientific criterion is to measure the leaf area index, which should be 1.2 during the seedling stage, 1.5 during the jointing stage, and not more than 5.5 during the heading stage. In the application of fertilizer, restraint should be exercised with nitrogenous fertilizer, and application of phosphate increased in a proportion of 2:1. For wetland millet, topdressings of fertilizer should be delayed until the booting stage. In caring for the millet, during the seedling stage irrigation should be interrupted to strengthen the seedlings against possible future drought, and during the 3 to 5 leaf stage, green manure should be trampled or tamped into the soil once or twice. Cultivation should be done at least three times. During the second deep hoeing, in particular, the "thin roots should be snapped so new roots will grow," hoeing being done to a depth of about 2 cun to promote root development and restrain the seedlings from wild growth. During the third cultivation, the soil should be banked high around the plants. This is remarkably effective in the prevention of lodging.

9432
CSO: 4007/469

GUIDELINES FOR ADVANCE DISTRIBUTIONS OF SUMMER GRAIN CASH SET

Taiyuan SHANXI RIBAO in Chinese 22 Jun 81 p 1

[Article: "Farm Work Department of Provincial CCP Committee Puts Forth Ideas on This Summer's Advanced Distributions; Determined to Proceed From the Strengthening and Perfection of Systems of Responsibility"]

[Text] This year's wheat production in Shanxi Province has two characteristics. The first is that 90 percent of all production teams that farm wheat have instituted a system of responsibility linked to production. The second is the lack of snow and little rain last winter and this spring, which has meant a decline in wheat output in some places. Under these circumstances, how should advanced summer distributions be handled? Recently, the Farm Work Department of the Provincial CCP Committee convened a conference of comrades in charge in all prefecture and municipal farm work units, and following discussion and study it put forth some ideas for advanced summer distributions in 1981. It emphasized that in making advanced distributions from the summer harvest, it was determined to proceed from the principles of benefit to the strengthening and perfection of the system of responsibility, benefit to gaining the confidence of the people about the party's policies, benefit to development of an all around good situation in rural villages, adherence to simultaneous concern for the state, the collective, and the individual, adherence to maintenance of distributions in accordance with work, the greater the work the more the return, and adherence to action on rewards and penalties in accordance with contracts as originally agreed.

1. Verification of Output. No matter the form of a system of responsibility, there must be verification of output and of earnings in a seeking after truth in facts. Under present circumstances, the fixed output quota portion is fairly easy to verify, but the portion of production in overfulfillment of quotas is comparatively difficult to statisticalize. The portion of production in overfulfillment of quotas may be checked using a combination of output estimates by cadres and old peasants, and representative sampling; there is no need to verify household by household. Resort to coercion and commandism and doing things in an oversimplified way are to be guarded against.

2. Fulfillment of Requisition Purchases. In places that have instituted the fixing of output quotas on a worker basis or a household basis, and particularly the fixing of work quotas on a household basis, indoctrination of the peasants in love of country and concern for the overall situation should be intensified in

order to spur them to actively fulfill requisition procurement quotas and to sell their good grain to the state. There must be diligent implementation of the party's policies of "absolutely no purchases of over-age grain," and "store grain among the people." In fulfillment of requisition purchases and purchase of output in excess of quotas, "putting the lash to an already fast ox" is to be avoided. In places that have instituted a system of responsibility, requisition purchases and purchases of output in overfulfillment of quotas is to be done in a uniform way by sales from collectives; there is to be no apportioning to commune members. When it is necessary to purchase grain at a negotiated price from a commune member household, it is to be done in accordance with state pricing policies and through democratic discussion with the collective and the household having the surplus grain in an effort to achieve satisfaction for the state, the collective, and the individual. At the time of grain sales, deliveries may be made uniformly by the collective or by individual households, with accounts being kept in a unified way.

3. Good Distribution of Consumption Grain. In units that have instituted calculation of remuneration on the basis of fixed quotas or have linked output to teams, distributions of grain for consumption are still to be made on the basis of proportional human labor or work done getting special consideration. Where units have instituted fixed output quotas on a worker or household basis, diligent investigation and study, summary of experiences, and discussion with the masses should be conducted to settle on a means of distribution. The problem of consumption grain for the families of military personnel and martyrs and households enjoying the five guarantees [childless and infirm old persons who are guaranteed food, clothing, medical care, housing and burial expenses by people's communes] is to be looked after and solved.

4. Checking Workpoints. This year numerous production teams have instituted a system of responsibility of fixed output quotas for individual workers or households for wheat production. As a result, work efficiency has increased greatly, and a relative decline has taken place in the amount of labor used to care for fields. Investment of labor during the first half of the year when labor was contracted for field production was strikingly less than the amount of labor invested in forestry, animal husbandry, and sideline industries. In making summer grain distributions, the method of participation in summer grain distribution on the basis of a proper proportional investment of labor by agriculture, forestry, animal husbandry, sideline occupations, and industry may be used; irrational distribution of wheat is to be avoided to the maximum extent possible.

5. Honoring of Rewards and Penalties. This year quite a few wheat producing units have had a drop in output. In units where the extent of drop has not been great, matters may be handled according to contracts as agreed. In units where the drop in production has been marked, solution may be found in either drawing a line for basic level of output or in appropriate reduction of output quota standards. In individual cases where contracts have not been carried out for no discernable proper reason, leaders at all echelons should begin by hearing widespread views from the people, taking prompt action or having matters decided in the courts.

6. Making Arrangements For the Livelihood and Production of Commune Members in Disaster Areas. All jurisdictions must act promptly, clarify disaster situations,

and take action to do an effective job of providing for the livelihood of commune members so as to calm the masses. All jurisdictions should proceed from needs for production, and actively help communes and brigades do a good job of assembling and transporting production materials such as seeds and chemical fertilizer. Communes and brigades where conditions permit, can help grain short brigades or households, borrowing grain from grain rich brigades or households, and making procedural arrangements, borrowers being responsible for repayment.

7. Doing a Good Job of Advance Cash Distribution. CCP committees at all levels should place on their agendas advance summer distributions, and make overall arrangements with consideration to all factors in the use of funds. They must properly define a proportionate repayment of loans and of machine cultivation, water, and electricity fees, and allocate a certain amount of funds for distribution to commune members, striving to have most accounting units be able to give commune members an advance distribution of cash.

9432
CSO: 4007/498

BRIEFS

NON-COLLECTIVE HARVESTING OF WHEAT--Once a system of responsibility for wheat linking output to households or individual workers has been instituted, how is harvesting and threshing to be done. The correspondent visited Duandian Commune in Linfen City with this question in mind. Their method was household by household harvesting and threshing. This method is faster and quality is higher than unified harvesting and threshing by production teams. In order to meet individual household threshing requirements, each of the production brigades and production teams in this commune assembled machinery, lined up threshing grounds and organized workforces in active preparation. Apart from the workforce required for tractors and threshing machines, which were uniformly assembled collectively, the harvesting, haulting, and threshing of grain by rolling were done by individual households. Communes called upon commune members to carry forward the spirit of mutual help and friendship, and exchange of labor in real cooperation. Following threshing by rolling, the wheat was weighed on site and commitments honored then and there. The fixed quota portion went to granaries, and the grain in excess of output quotas reverted to the households. Individual households that did not use machinery, but rather used draft animal power to turn the threshing wheels, tendered the fixed output quota portion of grain to their production team as had been stipulated. Each production team placed on individual households specific requirements for fulfillment of assigned state grain requisition procurement quotas, and the way in which they were to be fulfilled. [Text] [Taiyuan SHANXI RIBAO in Chinese 17 Jun 81 p 2] 9432

CSO: 4007/498

BRIEFS

AGRICULTURE, LIVESTOCK CIRCULAR--The Xinjiang regional agriculture and animal husbandry committee issued a circular on 22 June, calling on all places to actively implement all kinds of production responsibility systems and do a good job of promoting summer agricultural production. The circular noted that resolutely implementing the principle of distribution according to work, doing a good job of promoting preliminary distribution of the summer harvest and actually fulfilling the production responsibility system are new significant in further mobilizing the enthusiasm of the commune members and reaping a year-round bumper harvest. [HK030948 Urumqi Xinjiang Regional Service in Mandarin 1650 GMT 24 Jun 81]

LIVELIHOOD IMPROVEMENT--Following the implementation of the party's rural economic policy, the condition of food supplies for the people in the urban and rural areas of Kashi and Hotan prefectures has been greatly improved. For many years in the past, the variety of food supplied to these prefectures was limited and the quantity of food was small. At present, the food supplies are ample and people can buy food whenever they go to the grain shops. The Kashi municipality's food supplies are now 70 percent more than previously. The per capita ration of the commune members in (Shiyi) commune in Shache County in 1980 was 384 jin, 39 jin more than in 1979. Together with the grain produced on their private plots, the great majority of the masses have more surplus grain. By the end of May this year, commune members' households which had the most surplus grain had 3,000 to 5,000 jin of surplus maize and some 1,000 jin of surplus of wheat, while commune members' households which had the least surplus grain had some 1,000 jin of surplus maize and some 100 jin of surplus wheat. [HK230216 Urumqi Xinjiang Regional Service in Mandarin 1650 GMT 3 Jul 81]

CSO: 4007/528

BRIEFS

RAPE OUTPUT--Zhejiang Province planted more than 3.76 million mu of rape last winter, 800,000 mu more than the previous year. The average yield may reach 162 jin per mu. Total output of rapeseed is presently estimated to be more than 6 million dan. [Hangzhou ZHEJIANG RIBAO in Chinese 6 Jun 81 p 1]

AGRICULTURAL STATISTICS--The gross value of agricultural output for 1980 is 8.507 billion yuan. This is an increase of 3.69 times over the 1949 figure of 1.814 billion yuan. The grain output for 1980 is 14.35 million tons. This is an increase of 2.34 times over the 1949 figure of 4.3 million tons. The 1980 cotton output is 82,900 tons. This is an increase of 11.19 times over the 1949 figure of 6,800 tons. The output for rapeseed in 1980 is 272,100 tons. This is an increase of 2.01 times over the 1949 figure of 90,300 tons. The hemp and jute output figure for 1980 is 149,700 tons. This is an increase of 14.59 times over the 1949 figure of 9,600 tons. The 1980 sugarcane output is 588,000 tons. This is an increase of 8.13 times the 1949 figure of 64,400 tons. The tea output figure for 1980 is 75,400 tons. This is an increase of 10.42 times the 1949 figure of 6,600 tons. Silkworm cocoon output for 1980 is 65,000 tons. This is an increase of 5.19 times that of the 1949 figure of 10,500 tons. The number of live hogs raised in 1980 is 28.28 million head. This is an increase of 4.89 times over the 1952 figure of 4.8 million head. Output of aquatic products in 1980 is 817,400 tons. This is an increase of 10.51 times the 1949 figure of 71,000 tons. The output of citrus in 1980 is 91,400 tons. This is an increase of 4.61 times the 1949 figure of 16,300 tons. [Hangzhou ZHEJIANG RIBAO in Chinese 4 Jul 81 p 4]

CSO: 4007/527

Agricultural Research

AUTHOR: XIAO Shusheng [5135 2611 3932]

ORG: Huang District Science Committee

TITLE: "Application of 'Sparse Seeding [for Transplanting]Intermediate Number of Seedlings' in Second-season Late Rice Production"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 6, Jun 81 pp 7-9

ABSTRACT: "Dense seeding for numerous seedlings" is a common shortcoming in the second-season late rice production of Huanggang District. The seedlings look like silk-threads and many of them are transplanted in a single hole. This is currently one of the important reasons for the unstable and low yield of that crop. On the average, the district uses more than 250 jin/mu for the seedbeds, sometimes more than 300 jin, to produce 300-450 thousand seedlings for one mu of rice. The seed-consumption is more than 35 jin per mu. This paper uses numerous statistical data to prove the contention that the technique of producing the highest and most stable yield is to transplant strong seedlings in medium numbers. This technique requires that about 100 jin of seeds are planted in every mu of seedbed. The facts and theories with respect to the nutritional foundation for high yield in support of this form of seeding and transplanting are detailed.

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TITLE: "Hand Warming of the Spike Technique in Sexual Hybridization of Rice"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 6, Jun 81 pp 11-12

ABSTRACT: The most commonly used method of detasseling in sexual hybridization of rice is the warm water castration method. The warm water often causes the ovary to be injured in various degrees. In 1980, the authors found an even easier and safer technique of removing the male flower. At 5-8 o'clock in the morning just before the natural blooming of the rice plant, the spike of selected rice plants should be held in one hand for 1-4 minutes. All spikes which are to bloom naturally on the same day will open the glume 5 minutes after being warmed in the hand in this manner. On the morning of heavy dew or with breeds of thick hull, such as geng varieties, the spike should be held or warmed in the hand for 3-4 minutes. The anther should be cut off with a pair of scissors as soon as the glume breaks open. Details of the technique and its merits are given.

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TITLE: "On the Problem of Introducing Soybean Seeds"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 6, Jun 81 pp 18-19

ABSTRACT: Last year, the weather in Hubei was not ordinary. There was lots of rain in Jul and Aug resulting in very low temperature. Large areas of soybean were flooded and diseased, and the yield dropped very seriously. Many areas did not have soybean seeds for planting and large scale importation of seeds from other provinces had become necessary. In the author's opinion, if the seed importation attempts are not immediately controlled, the adverse effects of last year's bad weather will be carried on into the future. The author lists problems of geographical conditions, including latitudinal and altitudinal conditions of seeds, morphological differences, ripening characteristics, and comprehensive utilization features. The author urges an immediate analysis of soybean seeds intended for importation and planting in Hubei in the coming year.

AUTHOR: CHEN Guangwan [7115 0342 1238]

ORG: Cotton Research Center, Hubei Provincial Academy of Agricultural Sciences

TITLE: "Brief Report of Equivalent Quantity of Nitrogen Application for Cotton"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 6, Jun 81 pp 21-24

ABSTRACT: Nitrogen nutrition is the most important factor for high yields of cotton. While the nitrogen supply condition of the soil determines the formation condition of cotton nutritional and reproductive organs, it also, finally, affects the yield and the quality of the cotton. Since 1975, the author and colleagues have carried out an experiment with applications of same quantity of nitrogen in several major cotton producing regions of the province under identical conditions of cropping technique for the dual-crop system of cotton and wheat. The experimental technique involves the use of organic fertilizer and farm fertilizer for basic application with ammonium sulfate applications during the seedling, the budding, and the boll formation stages, but under the condition of equal quantity of nitrogen, half of the total nitrogen is in basic fertilizer, and the other half in the subsequent applications of chemical fertilizer, properly coordinated with phosphorus and potassium. Yield and other data of the experiment in 1975, 76, 78, and 79 are reported.

6248
CSO: 4009/383

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TITLE: "Quantitative Relationship Between the Temperature and Light Condition and the Growth and Development of Rice"

SOURCE: Luda LIAONING NONGYE KEXUE [LIAONING AGRICULTURAL SCIENCES] in Chinese No 3, 15 Jun 81

ABSTRACT: Field experiment data are used as the basis to observe and analyze from the meteorological point of view, the growth and development characteristics and the principle of reaction to temperature and light in different stages of rice crops under a natural environment to produce quantitative indices for the various stages of growth and development of rice. The regular breed Xinyin No 1, which is highly temperature sensitive,is used for the experiment and planted and transplanted in 7 periods of 15-day intervals, between 31 Mar - 5 Jul (seeding) and 8 May - 4 Aug (transplanting.) Preliminary analyses of the data obtained from the 2-year expriment indicate that sunlight is not a limiting factor for growth and development during the nutritional growth stage and the early stage of spike evolvement. In the later stages of spike evolvement and stages of blooming and fruiting, the action of light is very obvious. To a certain extent, sunlight can alleviate the harm done by low temperature and supplement thermal deficiency. Details of the experimental data are presented and analyzed.

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TITLE: "Soybean Organ Balance and Yield"

SOURCE: Luda LIAONING NONGYE KEXUE [LIAONING AGRICULTURAL SCIENCES] in Chinese No 3, 15 Jun 81 pp 14-21

ABSTRACT: Biotic yield is the foundation for the yield of seeds. For soybean the economic coefficient is generally at about 30-45 percent. At present, in breeding high yield crops, the emphasis is on improving shape of the stalk for the purpose of increasing utilization rate of photo energy. An adjustment of density can cause breeds of different individual yield capacity to produce nearly the same yield in a colony, but lodging is the limiting factor for the increase of density. The ideal organ balance model is reasonably small quantity of leaves, stems, pods, etc. and reasonably large seeds. This balance is related to genetic factors and is influenced by environmental factors as well. It is possible to use techniques of hybridization to produce high yield breeds of reasonable organ balance, however, and the rate of transfer of assimilation products to the seeds ultimately reflects the economic coefficient of the soybean breed. This paper reports results of a study on the relationship between organ balance and yield of 35 soybean breeds.

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TITLE: "Preliminary Report of Experimental Research on Rotated Plowing of River Alluvium Soil"

SOURCE: Luda LIAONING NONGYE KEXUE [LIAONING AGRICULTURAL SCIENCES] in Chinese No 3, 15 Jun 81 pp 21-24

ABSTRACT: At present, there is a great debate in Liaoning concerning whether the field should be turned every year or whether deep plowing and turning should be rotated every other year. In essence this is, in the course of restructuring the mechanized cultivation system, whether there should be more plowing or less plowing, and what is the effect on the energy resources and cost of cropping. For the purpose of providing an answer to the problem, the authors carried out an experiment on the Huihe alluvial plain of Shenyang, where the terrain is flat, the water table is 3m, the soil is light loam, the plow layer is 20cm in thickness, the soil fertility is in good condition, the organic matter content is about 15 percent, the whole nitrogen 0.1 percent. Results indicate that with the system of alternated year plowing, the organic matter accumulation is better, the soil texture does not deteriorate, and the yield is not influenced; in bean crops there is even a yield increase. The authors recommend the establishment of test points, demonstrations, and extension of the rotated plowing system wherever suitable in the province.

6248
CSO: 4009/386

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TITLE: "On Some Route Breeding Experiences of Rice"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 3, 10 Jun 81 pp 7-9

ABSTRACT: In the past few years a number of rice breeds have been produced in Fujian and they have changed the previous situation of depending upon out-of-the-province breeds for rice production, but due to poor basic research, insufficient considerations of breeding targets, etc. these new breeds cannot yet satisfy needs of production development. This paper describes the geographical, climatic, and technical conditions of Fujian for the purpose of clarifying breeding objectives. The paper maintains that the breeding targets should include: (1) A growth and development period of 110-125 days for early rice and 125-140 for late rice; (2)A yield 5-8 percent higher than current locally extended breeds, to amount to 800-1000 jin/mu in large acreage cropping; (3) A resistance to blast of rice and at the same time a tolerance of low temperature for early rice and a possiblity of tolerating or avoiding cold wind and dew damage for late rice; (4) Adaptability to different natural, soil, and cropping conditions; (5) Thin hulls and superior quality, with an above 70 percent rate of processed rice and above 8.5 percent protein content.

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TITLE: "Breeding Processes for Rice Rong-A and Yan-A and Their Mating Affinity Tests"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 3, 10 Jun 81 pp 9-12

ABSTRACT: For the purpose of obtaining new groups of hybrid rice with more ideal disease resistance, ripening stages, and high yield properties than the available ones, the authors observed the blooming habits, adversity resistance, growth and development characteristics, high yield properties, and genetic orgins of nearly 1000 primary rice materials. The breeding work began in 1976. After selection and retiring 1885 pairs of hybrid offsprings, 2 new sterile lines: Rong-A (short for Rongxin-75 Sterile Line) and Yan-A (short for Yanjiang-No 1 Sterile Line) were obtained. This paper reports their breeding processes, the major economic properties of F_1 test groupings using Rong-A and Yan-A, and outstanding problems (such as high susceptibility of early ripening groups to sheath and culm blight disease.)

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TITLE: "Experiment With Several New Insecticides for the Prevention and Control of Rice Planthoppers"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 3, 10 Jun 81 pp 15-16

ABSTRACT: In the past several years, the early and late rice crops of Jinjiang District have suffered damages of varying degrees from planthoppers in the middle and late stages of growth. In 1980, the authors carried out field and laboratory tests with a group of new insecticides, including 80 percent DDVP, 25 percent ethylamidine, 40 percent dimethoate, 25 percent methylamidine, etc. and a group of native farm insecticides, including sand mixed with diesel oil, water buffalo urine, kerosene, etc. Positive, short term (24-48 hours) effects are confirmed with all of these insecticides.

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ORG: WANG, CHEN of Science Committee, Fuqing County Bureau of Agriculture; WU of Dongsheng Brigade, Fuqing County

TITLE: "Technique of Oversummer Spore Culture of Fine Green Duckweed in Paddies"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 3, 10 Jun 81 pp 21-22

ABSTRACT: For a long time, there had been a problem in producing red duckweed. The asexual technique of propagation requires year-long breeding and care in the field. In 1965, the authors began to study the sexual propagation method for red duckweed, but the local species used had a low spore formation rate to cause the research to advance very slowly. In 1979, a species of fine green duckweed was introduced. The required temperature for propagation of this species is low, the reproductive process is fast, the yield is high, and its effect as a fertilizer is great. It was, therefore, quickly accepted by the masses. There was only the problem of oversummering, because the nutritional body of this species cannot tolerate high temperature. An experiment was carried out early in 1979 to raise its spores in the field in the summer. Sporocarps were gathered from the field in late May to early Jun to be stored and planted in middle to late Aug. In 1980, 7 jin of sporocarps were thus planted in 90 mu of paddies to grow for 150 days to produce a harvest of duckweed weighing 85,000 jin. Details of this duckweed culture technique are described.

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ORG: Fujian College of Agriculture

TITLE: "Ecological Characteristics and Formative Condition of Small-bodied Fujian Swines"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 3, 10 Jun 81 pp 27-29

ABSTRACT: The small-bodied local swine species are products of prolonged breeding and hard work of the masses of Fujian Province. They have the ecological characteristics of being suitable for the natural environment and the social, economical, and management conditions of the province. They consist of 3 types: the black colored Huaizhu, the spotted Northern Fujian Huazhu, and the black colored Putian Heizhu. Their common characteristics are: the weight of adults is 65-85 kg; they are very tame; they mature early (the mating age of sows is 5-6 months); they have thin skin and thick meat; and they have a high dressed rate (70-76 percent.) This paper discusses the relationship between the formation of the 3 swine species and the ecological environment, the geographical environment, the climatic condition, the socioeconomic condition, and the feeding and management condition. Some possible improvements are suggested.

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TITLE: "Reasonable Development and Utilization of the Natural Grassland Resources of Fujian"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 3, 10 Jun 81 pp 31-34

ABSTRACT: In Fujian Province, natural grassland and shrubbery suitable for grazing occupy more than 47,000,000 mu, amounting to 26.3 percent of the land area, and more than twice the size of the arable acreage. But,the grassland areas are very scattered; there are only 650 patches measuring more than 1000 mu each. The composition of the vegetation is very complex and the fodder is of poor quality. The author proposes that research work on breeding, propagation, and introduction of good quality feed grass should be emphasized to establish bases of grass seed supply. Existing plants that are poisonous to animals should be removed. Wherever suitable, man-made grassland should be developed. Reasonable fertilizer application and seeding should also be emphasized to improve the quality of the grassland. Data of grassland development in the USA, New Zealand, and England are mentioned to support the author's ideas.

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TITLE: "On the Four Constructions to Establish a Foundation for Citrus Production"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 3, 10 Jun 81 pp 37-40

ABSTRACT: The development of the citrus industry has been very fast in Fujian in recent years, but there is a lack of overall planning. There are a large number of citrus orchards of mature but nonproducing trees. The yield varies a great deal from year to year, and the unit yield is low. In order to produce commercial fruits in a large scale, it is necessary to have a stable yield of more than 2000 jin/mu and the fluctuation from year to year must not exceed 15 percent. If this objective is to be reached, the author maintains that (1) There should be a basic construction of breeding superior varieties and seedlings; (2) The soils of the citrus orchards should be improved on the basis of regarding the project as a basic construction; (3) There should be construction projects to improve the irrigation facility of orchards; (4) Large scale afforestation is the fourth construction project to cover all barren areas surrounding citrus orchards with suitable vegetation so as to improve the ecological environment for the citrus trees.

6248
CSO: 4009/387

AUTHOR: ZONG Benmu [1350 2609 2606]
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TITLE: "Strengthen Equipment Management and Improve the Level of Equipment Management"

SOURCE: Beijing SHUINI [CEMENT] in Chinese No 5, 10 May 81 pp 2-4

ABSTRACT: Equipment management is an important part of managing an enterprise. It is the precondition if the enterprise is to realize good quality, low cost, safe, and balanced production to guarantee the completion of the State's plan. In order to manage the equipment well, the work should include the following aspects, the paper maintains: (1) Planned inspection and repair of the equipment should be strengthened; (2) Efforts should be given to the research on techniques of early forecast, inspection and monitoring of deterioration and damage of equipment and its parts; (3) Carry out work of simplification, serialization, and standardization of types and parts specifications of cement equipment; (4) Perform good basic work of equipment management, including record keeping, setting up quality standard for inspection and repair work, and maintaining complete sets of drawings of the equipment.

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ORG: Jinan Cement Plant

TITLE: "Several Viewpoints in Improving the Quality of Standing Kiln Cement"

SOURCE: Beijing SHUINI [CEMENT] in Chinese No 5, 10 May 81 pp 28-32

ABSTRACT: Quality instability of clinker is a common problem in today's standing kiln cement production. The paper discusses this problem in the following 10 aspects: (1) The effect of the ratio of height to diameter of the kiln on the clinker quality depends upon many other factors; (2) Enlargement of the opening also depends upon other conditions; (3) Height of kiln cover and chimney is important; (4) Composition of the mixture should be reasonably chosen; (5) A low iron mixture should be investigated; (6) The raw material should be as homogenous as possible. (7) The fuel affects the quality of the clinker; (8) A stable ratio of coal to raw material improves the stability of granulation of the clinker; (9) Quality management measures guarantee the quality of the cement product; (10) Work procedure parameters should be adjusted when the standard for the soft processing method (mainly the quantity of water used will be different) becomes official on 1 Jan 80.

6248
CSO: 4009/380

AUTHOR: GAO Yingquan [7559 1758 2164]

ORG: Reporter of NONGCUN GONGZUO TONGXUN

TITLE: "Changes Following the Adoption of Linking-yield-to-labor in Rice Production"

SOURCE: Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 6, 5 Jun 81 pp 13-14

ABSTRACT: Although the paper does not include a clear description of the system of linking-yield-to-labor, it appears that it involves the designation of a plot of the collectively owned land to be farmed by a member or a household of the collective body, with a predetermined minimum yield guaranteed by that member and a system of awards for surplus and penalty for shortage. The term obligated-plot is mentioned, not to be confused with private plot. The author paid a visit to Qionghai County of Hainan Island, Wengyuan County of Northern Guangdong, and the Banfu Commune of Zhongshan County of the lower reaches of the Pearl River Delta, where the aforementioned system has been adopted, by 83 percent of the production teams last year and more than 90 percent this year, in case of one commune. Aside from numerous yield increase data credited to the system, the paper also mentions that it is essential for the system to set the guaranteed yield at 3-5 percent above the 3-year average, or 1-3 percent above the historical high, and to guarantee the member that there will be no policy change for 3 or 5 years if the system is to bring about all the favorable results described in the paper.

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TITLE: " Linking-yield-to-labor is Feasible for Wheat as Well"

SOURCE: Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 6, 5 Jun 81 pp 15-16

ABSTRACT: Since collectivization, the labor contract [guaranteed amount of labor] for each small section of land at a given amount of pay has been the system with respect to field management for wheat. The system persisted throughout the 10 years of catastrophe [referring to the Culture Revolution, presumably.] The system is the important reason for the tremendously successful wheat production (at an average yield of 500 plus jin/mu) of the district. Some believe the linking-yield-to-labor system would be a step backward, would amount to risking the success already achieved, would not be necessary in view of the high degree of mechanization, and would encounter the problem of the masses unwilling to assume the responsibility of guaranteeing such a high yield level. This paper argues for a change of system. Among other reasons, it maintains that,using Houcun Brigade as an example, the members can see the benefits of the new system even the wheat yield is as high as 800 jin/mu. Masses are quoted to have said: "...the diligent will not sweat for nothing, the lazy can no longer fool around and eat."

6248
CSO: 4009/354

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TITLE: "Preliminary Report of Observation of Introduction and Experimental Breeding of Large White Nicholas Turkeys"

SOURCE: Nanjing XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE] in Chinese No 1, 81 pp 1-4

ABSTRACT: In suburbs of Beijing, Zhoushan Islands of Zhejiang Province, and a few other areas of China, turkeys, the bronze colored ones only, have been raised in small quantities. There is no large scale turkey farming beyond these. In Apr-Sep, 79, the U.S. citizen ZHANG Xianguang [1728 0342 0341], a fowl disease specialist, suggested during his lecture tour in China that turkey would be a good solution for meat supply. He subsequently contacted the Nicholas Farm of the USA, whose gift of 2 cases of turkey eggs arrived Shanghai on 22 Aug 79 and the cases contained 235 perfect and 165 broken eggs. Laboratory analyses of 20 randomly picked broken eggs disclosed no bacterial infections. Of the perfect ones, 217 were fertilized eggs and 160 chicks were hatched on 20 Sep. Average weight of the chicks, at 12 weeks, 30 weeks, etc., their feeding and other habits, incidences of diseases, and the survival rate at various stages are reported. Their egg-laying and reproductive properties are subjects being observed at present.

AUTHOR: ZOU Feng [6760 1496]

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TITLE: "Application of Blood Type of Domestic Animals in Animal Husbandry"

SOURCE: Nanjing XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE] in Chinese No 1, 81 pp 18-24

ABSTRACT: Traditionally, blood type means blood characteristic determined by immunological techniques, i.e. blood type is determined by one or several antigen factors of the blood cell and is genetically controlled. The modern meaning of the term also includes many genetically controlled types of proteins and enzymes, however. Current knowledge concerning swine blood types and bovine blood types and their genetic factors are used as examples to illustrate the complexity of blood types of domestic animals. In animal husbandry, blood type determination may be used to (1)verify pedigree, especially in case of artificially inseminated births; (2) to study blood lineage and the origin of species; (3) to study the relationship between blood type and economic characteristics; (4) to serve breeding of animals of specific characteristics or adaptations.

AUTHOR: LI Guoyi [2621 0948 1150]

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TITLE: "Surgical Treatment of Compound Chest and Abdominal Open Wound"

SOURCE: Nanjing XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE] in Chinese No 1, 81 pp 34-35

ABSTRACT: While pulling a concrete telephone pole up a hill, a mule was hit by a car. It was immediately brought to the hospital, in the afternoon of 14 Aug 77, with fractured ribs and intestines and a portion of spleen leaking out of the open wound, measuring 22-25 cm. Surgery was performed followed with antibiotics, Chinese traditional drugs, etc. From 18 Aug on, it was on the mend. On 7 Sep, it was led from the hospital to walk 25 km back to its own production team. On 20 Sep, the unit, which owned the car, paid for the mule in addition to all the hospital expenses. The mule was retired and dissected. The surgical procedure and the dissection findings are reported.

AUTHOR: None

ORG: Pei County Animal Husbandry and Veterinary Station

TITLE: "Surgical Treatment of Persistent Stomach Curvature Constipation of Horses"

SOURCE: Nanjing XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE] in Chinese No 1, 81 pp 35-36

ABSTRACT: Constipation is a common disease of horses and mules, amounting to more than 70 percent of all their diseases. Statistics of the cases of the station in 1975-79 revealed a mortality rate of 40 percent for the stomach curvature type constipation cases, which amounted to 12 percent of all cases of constipation. The disease of stomach curvature constipation is difficult to treat and death often is the result of excessive administration of laxatives. A technique was gradually developed to apply pressure to the intestines after cutting open the abdomen and in some cases saline water was injected into the intestines as well. After this technique was perfected in 1979, the rate of cure of stomach curvature constipation was raised from 47.7 to 93.4 percent. The surgical and care procedure involved in the technique is described.

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TITLE: "Preliminary Report of Application of LH-RH and Similar Products for Animal Use, Made in China for Early Pregnancy Diagnosis of Dairy Cows"

SOURCE: Nanjing XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE] in Chinese No 2, 81 pp 4-6

ABSTRACT: Experiments were carried out with artificially synthesized LH-RH analogous product for animal use (No 7901, a product of Shanghai Biochemical Pharmaceutical Plant) to test pregnancy of 3 groups of dairy cows, on 4-10 days, 13-18 days, and 21-27 days following mating. Of the 62 cows tested, estrus did not appear for

[continuation of XUMU YU SHOUYI No 2, 81 pp 4-6]

37 heads in a period of 35 days, and 35 of these verified to be pregnant. Estrus appeared to 25 cows. The paper concludes that the product is safe within the dosage of 200-500 μg, and if interference of other factors is discounted, the accuracy of pregnancy diagnosis may be as high as 90.9 percent.

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ORG: Regionalization Office, Jiangxi Provincial Department of Animal Husbandry and Marine Products

TITLE: "A Discussion on the Developmental Potential of Animal Husbandry Products in Jiangxi Province"

SOURCE: Nanjing XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE] in Chinese No 2, 81 pp 12-16

ABSTRACT: Jiangxi is one of China's major bases of commercial grain production, but it is very backward in animal husbandry. The value of animal husbandry products amounts to only 10.7 percent of that of all agricultural products. Traditionally raising pigs is a family affair; the same is true for chickens, eggs, etc. In the 30 years, the number of draft oxen has increased 40 percent. The dairy industry produces 0.5 jin of fresh milk per capita per year. Raising steers for meat is a new industry; there are now 6000 heads of hybrid steers of various breeds in the province. About 22 percent of the province is grassland, 7 times the size of available grazing land in all of Japan. Raw materials for processed feed are also plentiful. The author suggests that the potential for developing animal husbandry is tremendous if the practice of regarding it as an auxiliary industry is changed. Grain production should be the major enterprise of the agricultural economy but should not be the only enterprise. The development of the province's potential in animal husbandry depends, the author maintains, on rapid development science and technology related to animal husbandry and veterinary medicine.

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TITLE: "A Survey of Incidence of Tumors in 100,000 Plus Rabbits in Shanghai"

SOURCE: Nanjing XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE] in Chinese No 2, 81 pp 23-26

ABSTRACT: Two inspections of 103,781 rabbits in the Shanghai Rabbit Freezing and Processing Plant produced 210 tumor-like specimens and histo-pathological examinations of these determined 160 of these to be malignant tumors. Most of these are renal mother cell tumors, unlike related data of foreign countries, with unilateral cases far exceeding bilateral cases (143:7,) and infiltration and metastasis phenomena were observed. The average organic chlorine insecticide residue (666) in the meat of rabbits with tumors is 0.21 ppm, 1.65 times that of healthy rabbits (0.127 ppm); the total DDT content is 0.023 ppm for diseased rabbits and 0.009 ppm for healthy rabbits. The differences are obviously significant in bio-statistics.

AUTHOR: WANG Liang [3769 5328]

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TITLE: "Clinical Analysis of Congenital Muscular Spasm of Piglets"

SOURCE: Nanjing XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE] in Chinese No 2, 81 p 34

ABSTRACT: Congenital muscular spasm of piglets has been frequently reported in foreign countries. In China, there are cases in all areas. Out of 165 new piglets of Jul 72, 34 reveal this disease in different degrees of severity. The symptoms disappear in 10 or so days after birth, but the disease affects weight gain and the survial rate is only 85 percent of that of piglets born healthy. Analyses of the relationship between the incidence of the disease and the breed, the relationship between the health, the number of pregnancies, and the age of the sow and the incidence of the disease in the piglets, and the relationship between the incidence of this disease and the feeding and management of the swine herd seem to indicate that unbalanced feed and moldy feed may have possibly affected the appetite of the sow and the development of the fetus and the inferior feeding practice may have also caused a confusion of the neurological tissues and functions. Future work in studying the histo-morphology of the central nervous system and the blood chemistry of the diseased piglets, in identifying the molds, isolating the toxins, and in feed and breeding experiments is awaited. Preliminary studies here reported have excluded genetic factors, however.

6248
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TITLE: "Indirect Blood Agglutination Test In the Diagnosis of Trypanosomiasis of Domestic Animals"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 5, 20 May 81 pp 9-15

ABSTRACT: Due to the fact that the appearance of trypanosomes in the blood of sick animals is often uncertain, especially in case of chronic cases or in sick oxen or water buffalos, examination of blood smears under the microscope is not dependable and death of animals and continuous spreading of the disease will be the result of missed victims. Since the creation of the indirect blood agglutination technique, its applications for the diagnosis of other diseases of parasitism have been frequently reported, but there have been few reports here or abroad of its application for the diagnosis of trypanosomiasis. This paper reports satisfactory experiments and clinical applications by the authors, Jul 79 to Apr 80. The technique employed is described.

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TITLE: "Observation of Vitality of Toxoplasma gondii by IB-RS-2 Cells After Irradiation of Tachyzoites"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 5, 20 May 81 pp 15-21

ABSTRACT: In a previous paper (SHOUYI KEJI ZAZHI No 1, 80) the authors reported detailed observation of tissue culture, splitting propagation inside the tissue, and propagation culture of Toxoplasma gondii. This paper reports a continuous study on the relationship of cell vitality after fast irradiation of Tachyzoites with varying doses of Co^{60} γ ray. The objective of this study is to observe the ability of the irradiated parasite to invade the cell and the action [of irradiation] in suppressing the multiplication of the parasite so as to investigate the possibility of obtaining weakened antigen. Results indicate that reproductive ability of the parasite in the body of white mouse is not lost unless radiation above 20Kr is applied.

AUTHOR: JIA Quanfu [6328 0356 4395]
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ORG: Both of Chinese People's Liberation Army University of Veterinary Medicine

TITLE: "Research on Micro-grain Skin Grafting Technique and Its Application in Clinical Veterinary Medicine"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 5, 20 May 81 pp 30-33

ABSTRACT: At present, a great difficulty remains in the treatment of large area skin injury, because allografts cannot be kept alive for a prolonged period of time. The technique of micro-grain skin graft is the use of small quantity of skin to repair a large area of missing or damaged skin. The authors experimented with promoting the survival and growth of micro-grain skin grafts by adding saline solution and nutrients to the grafts, based upon the theory of tissue culture. The micro-grain grafts, thus treated, were transplanted on experimentally injured ears of rabbits and the condition of healing was observed. Generally speaking, healing occurs in 9-12 days in the transplanted group; in the control group, healing requres 20-29 days. The micro-grain grafts also appear to improve the condition of scars.

AUTHOR: SUN Ji [1327 0679]

ORG: Huairen County Domestic Animal Improvement Station, Shanxi Province

TITLE: "Electrical Acupuncture for the Treatment of Infertility of Female Animals"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 5, 20 May 81 pp 33-34

ABSTRACT: In China, the treatment of mares [female equine animal] with electrical acupuncture for infertility has been reported but not its use to treat infertility in other female animals. Since 1978, the author and colleagues have repeatedly experimented with using acupuncture to treat infertility in cows, female donkeys, and female sheep, a total of 86 individuals of 11 different species. After treatment, 60 of these foaled and 20 ovulated, amounting to an effective rate of 93 percent. Acupuncture was without effect for 6 cases, amounting to a rate of 7 percent. The technique, typical case histories, and the acupuncture points used are reported.

6248
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No. 158

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14 August 1981

CHINA REPORT

AGRICULTURE

No. 158

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

Readjustments to North China's Farming System Reviewed
(NONGYE JINGJI WENTI, 23 May 81) 1

Orthodoxy of Noncollective Production Practices Questioned
(NONGYE JINGJI WENTI, 23 May 81) 9

Fujian

Briefs
Increased Farm Loans 15

Guangdong

Housing Boom in Countryside Continuing
(NANFANG RIBAO, 22 Jun 81) 16

Farmland Being Used for Housing
(NANFANG RIBAO, 20 Jun 81) 17

Silkworm Cocoon Harvest Increases
(NANFANG RIBAO, 18 Jun 81) 19

Status Report on Economic Crops, Afforestation, Family Sidelines Presented
(Zhong Chengxiang; ZHONGGUO XINWEN, 24 Jun 81) 21

Guizhou

Briefs
Guizhou Bumper Rapeseed Harvest 23

Hubei

Briefs
Peasant Association 24

Liaoning

Ways of Increasing Soil Productivity Discussed
(Lu Xinlai, et al.;LIAONING NONGYE KEXUE, 15 Jun 81) 25

Yunnan

Briefs
Tropical Plant Research Achievements 32

II. PUBLICATIONS

Table of Contents of 'SHUICHAN XUEBAO' No 1, 1981 33

Table of Contents of 'LINYE KEJI TONGXUN' No 4, 1981 35

Table of Contents of 'SENGONG KEJI TONGXUN' No 4, 1981 37

Table of Contents of 'NONGYE JINGJI WENTI' No 5, 1981 39

TAIWAN

Briefs
Rice Granaries 41

I. GENERAL INFORMATION

READJUSTMENTS TO NORTH CHINA'S FARMING SYSTEM REVIEWED

Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese
No 5, 23 May 81 pp 27-30

[Article compiled by Grain and Oilseed Production Bureau, Ministry of Agriculture: "Summary of the Status of Reforms to the Farming System in Northern Regions"]

[Text] During the last 2 years quite a few places have actively and steadily readjusted the internal structure of agriculture, and have won initial successes. In order to effect further reforms in the farming system and make rational readjustments in crop patterns, during July and August 1980, the Ministry of Agriculture organized an inspection of reforms to the farming system in northern regions. Participating in the inspection campaign were Henan, Hebei, Shandong, Shanxi, Shaanxi, Gansu, Beijing, and Tianjin. Fuyang and Suxian Prefectures in Anhui and Xuzhou Prefecture in Jiangsu also participated in report-back meetings. Now the inspection and report-back findings have been compiled and summarized as follows:

Changes and Present Status of the Farming System

The scope of the inspection included the areas south of the Great Wall, north of the Huai He, and east of Longdong and Baoji. This area contains about 440 million mu of cultivated land, about 30 percent of the country's cultivated land; and a population of somewhat more than 260 million people, or 27 percent of the country's population, for an average of 1.7 mu of cultivated land per capita. Most places have large populations relative to the available land, and a fine tradition of intensive farming. The farming system during the period immediately following Liberation may be divided into four major categories. The first was the south central part of Hebei, north and east Henan, and all of Shandong where there prevailed a system of three crops every 2 years, with autumn grain predominant, the land lying fallow in winter, and a small area of two crops every year. The second was the western part of Henan, southern Shanxi, and central Shaanxi, where mostly a system of four crops every 3 years prevailed in which the summer harvested grain crop predominated and fields lay fallow in summer [after the harvest]. Third was eastern Hebei, Tianjin, and part of Beijing where one crop per year predominated and where intercropping of three crops every 2 years was done. Fourth was northern Shaanxi, northern Shanxi and part of the Zhangjiakou area of Hebei, where basically one crop per year was grown.

These various farming systems had all come about gradually as the result of long experience, and they were compatible with local natural conditions and the socioeconomic conditions of the time.

Following Liberation, as production conditions steadily developed and the level of scientific farming gradually increased, great changes also took place in the farming system in these areas. They went through three main stages of two rises and one fall.

The first stage was in the 1950's when mostly there was a change to high yield crops and expansion of the multiple-cropped area. In the case of both the three crops in 2 years winter-fallow areas, and in the four crops in 3 years summer-fallow areas, development was in the direction of rotating two crops, either wheat and corn, or wheat and sweet potatoes. According to statistical data from the six provinces and municipalities of Shanxi, Hebei, Shandong, Henan, Shaanxi, and Beijing, the area of high yield crops like corn and sweet potatoes rose from the somewhat more than 110 million mu of 1952 to the somehwat more than 150 million mu of 1956, and the multiple cropping index rose from 131 percent to 137 percent. The system of three crops every 2 years took a commanding position.

The second stage was the late 1950's and the early 1960's. As a result of the "communist trend," the "proneness to boasting and exaggeration," and the "proneness to blind guidance," as well as the effects of severe natural disasters, productivity was greatly damaged and the area planted to wheat and corn, which require large amounts of water and fertilizer, was curtailed, while the growing of tubers continued to increase. The area of two crops each year diminished, and by 1965 the multiple-cropping index fell to 133 percent, a retreat to the level prior to 1956.

The third stage was the early 1970's. Because of improvements in production conditions, the wheat acreage resumed its climb; the summer-sown area increased; and the spring-sown area diminished. The ratio of two crops per year markedly increased, and interplanting developed very rapidly. Flat seeding and multiple planting also increased to bring about a situation of simultaneous development of multiple forms.

During the last 2 years, as a result of summarization of the lessons of experience everywhere, some readjustments have been made in the farming system. The growing of some cotton and oil seed economic crops has been revived and developed, and some of the area ill-suited to wheat growing has been cut back. An increase has taken place in the area of a single crop a year, while the two crops per year area has decreased. Statistics from Henan, Shandong, Shanxi, Shaanxi, Beijing, and Tianjin show that currently the one crop per year area stands at 36 percent; the three crops every 2 years area stands at 28 percent; and the two crops every year area stands at 36 percent. The overall tendency is gradual development toward a more sensible and more perfect direction. It should be affirmed that achievements are the main thing, and the direction is a correct one.

1. Better use of natural resources. This area's frost free period is usually 170 to 220 days, > 0°C accumulated temperatures are 4500 - 5200°C, > 10°C accumulated temperatures are 4000 - 4700°C, and annual amount of sunshine is

2,400 to 2,800 hours. Looked at in terms of light and heat resources, an overwhelming portion of the region can institute a summer and autumn two crops per year system. Formerly, largely because of the limitations of the social system and the conditions of production, advantages could not be given full play. Now as improvements have taken place in water, fertilizer, soil, and seeds, commensurate reforms have been made in the farming system. Expansion of the multiple cropping index, and fuller use of this region's copious light and heat resources are the trend in the development of agriculture here.

2. Adaptations to changes in production conditions. According to statistics from Hebei, Shandong, Henan, Shanxi, Shaanxi, Beijing, and Tianjin, the irrigated area in 1965 was 79.31 million mu; in 1970, 132.51 million mu; and in 1978, it amounted to 207.7 million mu, a 1.6 fold expansion in 13 years. In addition, much capital construction for drainage, improvement of the soil, and terracing of fields was done. The amount of chemical fertilizer used per mu of area sown was somewhat more than 15 jin in 1965, 25 jin in 1970, and 55.7 jin in 1978 for a more than twofold increase. Farm tractors increased by more than 18,000 of various types between 1965 and 1978, and the machine cultivated area increased from 21 to 50 percent during the same period. This shows that reform of the farming system depends not solely on subjective desires but on a foundation of rather full material conditions.

3. Furtherance of growth in agricultural production. Since the 1970's, with the exception of cotton, this region's production of grain, oilseed crops, flax, and flue-cured tobacco has increased in varying degrees over the 1960's. Increased grain output, in particular, has been strikingly effective in changing the situation of grain shortage. Statistics show that during the 1960's the state transported a total of 18.9 billion jin of grain into the five provinces of Shanxi, Hebei, Shandong, Henan, and Shaanxi, more than 4.2 billion jin in the maximum year of 1963. In a situation of gradual annual decrease in the grain growing area (100 million mu less in the 1970's than in the 1950's), to alter this situation of grain shortage required mostly reliance on reform to the farming system and increases in per unit yields to bring about great increases in grain output. During the period 1970 to 1978, as a result of reforms to the farming system in these five provinces and Beijing Municipality, the multiple cropping index for grainfields rose from 142.2 percent to 153.9 percent, and realization of grain self-sufficiency or self-sufficiency with surplus in Hebei, Shandong, and Henan played a major role.

Problems Occurring in the Course of Reform of the System, and Readjustment Tasks

While affirming achievements by reform of the farming system, this report-back also analyzed existing problems. During the period of rampage of Lin Biao and the "gang of four," in particular, metaphysics ran rampant, idealism prevailed, and reform of the farming system was termed a "revolution in political ideology," and "reform of the new and maintenance of the old, two ideas of progress and regression, and a sharp struggle between two lines." Any differing views, or even some sensible ideas, were termed reflections of the class struggle, or criticized as rightist conservative ideas and obstructions. This caused some places and some units to go against objective laws, and to carry out "blind guidance,"

or "arbitrary uniformity," which affected the healthy developing of farming system reform.

Problems that occurred in the work of reforming the system. Some places excessively expanded the multiple cropping index without regard to local natural conditions or production conditions, only to receive no increases in output or even decreased output. In some places crop patterns were irrational, on top of which were price policies, so full benefit was not derived from the mutual reinforcement of grain crops and economic crops, and summer grain and autumn grain. Within summer grain, once the wheat acreage had been expanded, the wheat, pea, and hyacinth bean acreage was overly reduced. Within autumn grain, once high yield crops such as corn and sweet potatoes had increased, gaoliang, millet and such miscellaneous crops, as well as pulse crops were greatly reduced with the result that some places lacked fuel and fodder, and had only a single variety of grain. This also impaired revival and nurture of soil fertility. Still other places did not decide a rational farming system on the principal of "most superior" to match crop combinations and varieties, but blindly expanded planting of high yield crops and high yield varieties that had a long growth period, exacerbating the conflict between successive seasons and the rotation of crops, which hurt increased output for both seasons. Problems of this sort must be gradually solved in future work. Therefore, the requirements and major tasks, over the short term, in readjusting the farming system are as follows:

1. Appropriate readjustment of the cropping system. As a result of inspection and discussion, everyone's relatively unanimous view is that where water and fertilizer conditions are fairly good, manpower and animal power rather great, and levels of mechanization and per unit yields fairly high, a farming system in which two crops a year predominate should be adhered to. In the matching of crop combinations and varieties, further improvements and perfection should be done for higher output from both crops. Dry plains areas with moderate fertility conditions should basically maintain a system of predominately three crops every 2 years, with the land lying fallow seasonally, but they should also actively create conditions for development of two crops per year. Right now, of major importance is the need to make substantial readjustment of places where heat conditions are a bit marginal and where the conditions of production are not what they should be, such as mountain areas, hills with infertile soils, and low-lying, sandy or alkaline areas that produce two crops each year. Xinxiang Prefecture in Henan Province plans to restore to dryland wheat or a single season in early autumn 300,000 mu of land in its western mountain regions that produces two crops a year but where water resources are inadequate and drought frequently occurs. It plans also to convert about 200,000 mu of sandy, infertile land in the east to one crop of wheat and one of green manure. Anyang Prefecture has 700,000 mu of low-lying fields that produce two crops a year, the wheat yield from which is somewhat more than 100 jin per mu, and the late corn yield from which is somewhat more than 200 jin per mu. It plans to convert part of this area to a single crop of spring corn for yields of between 400 and 500 jin per mu. Such a readjustment, everyone acknowledges to be necessary and workable.

2. Selection of the most superior farming methods and crop combinations. Everyone is aware of the need to proceed on the basis of the concrete, local conditions, following the principle of making the most of advantages, playing up strengths and playing down weaknesses, and pursuing the beneficial while eschewing the harmful, doing whatever brings high output and great earnings, whatever is helpful to the use and nurture of the land, and satisfies the requirements on every side, selecting the most superior several methods of farming, determining what shall be primary and accessory, the two existing side by side, not following only a single track, and not being arbitrarily uniform. At the same time, in the various forms of farming, one should scientifically match crop combinations and varieties. For example, Yantai Prefecture's adoption of a farming method that is mostly "three plantings and three harvests" in "two four plots" handles quite well the relationship between the summer and autumn crops and among the early, mid-season, and late crops. The third crop, in particular, suits the early ripening soybeans, thus both increasing output of grain and improving soil fertility, so that 3.8 million mu of intercropped corn produces yields averaging 700 jin per mu, and the early crop of wheat produces an average of more than 400 jin per mu. This method has become the major farming method welcomed by the masses. As another example, Hanzhong Prefecture in Shaanxi Province appropriately reduced its wheat and green manure area, and expanded its rape area for the promotion of two crops, one of rape and one of hybrid rice. As compared with the former two crop system of wheat and rice or green manure and rice, not only did annual output not diminish, but earnings increased, and the conflict between growing seasons was moderated. Results in nurture of the land were also pretty good. All jurisdictions should conscientiously summarize and promote experiences of this kind.

3. Rational readjustment of crop patterns. In 1979, the area sown to grain in this region amounted to 30 percent of the national total. Cotton amounted to about 50 percent; peanuts and sesame seeds 40 to 50 percent, and flue-cured tobacco 38 percent. This is both a key grain growing area in China and a key economic crop producing area. In 1978, grain crops occupied 84 percent of the sown area, and economic crops 12 percent. For the past several years, the economic crop area for crops such as cotton has been cut back a little more, but readjustments have been made during the most recent 2 years. Henceforth, economic crops are to be revived and developed on the basis of the needs of the state and the people's livelihood so that the peasants' incomes will increase and they will become wealthy with all possible speed. Within the grain crop structure, suitable readjustments also have to be made, such as cutting back on some low yield wheat and restoring some barley, peas, and hyacinth beans; cutting back on some corn and sweet potatoes for which yields have not been high, and increasing somewhat soybeans, millet, and minor grains. Henan Province plans to convert low yield corn fields with yields below 300 jin per mu to soybeans, or to soybeans intercropped with corn. They particularly want to revive and develop soybeans in the Yellow River flood region and in the two hetu [0678 0960] regions of central and southern Henan. By 1985, pulse and green manure crops will be restored to 35 million mu in the province. Of course, how to readjust the farming system in this region in order to still be able both to assure increase in the total output of grain, or at least no decline, while at the same time being able to increase earnings more is a problem requiring diligent study for solution by every jurisdiction.

Several Problems Requiring Attention in the Course of Readjustment

This inspection permitted a summarization of historical experiences, while at the same time studying problems to be given attention in the course of readjustment.

1. Reform of the farming system has to be done both actively and safely. The farming system has broad ramifications, virtually touching upon all of agriculture and relating to the needs of the state, the collective and individuals. In making readjustments, it is necessary to use a scientific attitude in carrying out intensive study, and careful handling. The existing system of farming generally has its own general conditions and foundations, the advantages and disadvantages of which must be weighed in order to prevent going from one extreme to another, or using methods of arbitrary uniformity to correct arbitrary uniformity. Particularly in the handling of the relationship between summer and fall, the farming system, and multiple cropping system questions, diligent study is required for satisfactory handling. Cutbacks to the crop system are easy, but increasing grain output is difficult. One should be sure not to veer back and forth. First is the problem of the relationship between summer and fall. In this region, use of wheat as the principal summer grain crop is greatly advantageous. Statistics from Shanxi, Hebei, Henan, Shandong, Shaanxi, and Beijing show a 1978 summer grain crop area of more than 210 million mu, and an output totaling more than 57 billion jin. This was 41 percent of the total grain growing area for these places, and 39 percent of their total output. This was also 44 percent of the national summer grain growing area, and 48 percent of total summer grain output. This played a great role in satisfying the needs of the country and in improving the people's livelihood in cities and the countryside. Therefore, as production conditions improve, and summer grain production is actively developed, particularly increases in yields per unit of area, it is extremely necessary to make full use of natural resources and to satisfy the needs of society. The achievements in summer grain production for these years must be accurately evaluated. However, one must also realize that some places blindly expanded the growing of wheat to get two crops per year without considering water and fertilizer conditions, with the result that the increased yield from two crops was less than from a single crop. Some ignored autumn grain production, causing increased output in summer and decreased output in the fall, which was not favorable for increased production for the entire year. All this must be conscientiously studied and gradually readjusted in a planned way. In the present situation in which great increases in per unit yields of summer grain are not possible, any excessive reduction done excessively rapidly may make it difficult to insure steady increases in grain output. If blind readjustments cause a decrease in grain production, this will bring hardships for the livelihood of the masses. Second, on the question of farming methods, most important is how to correctly regard intercropping and flat sowing of two crops. Experience everywhere has shown each of these two methods of farming to have advantages, but neither are sufficiently used. In the north China region, however, intercropping is better able to use the various natural resources of soil, fertilizer, water, air, light, and heat. It is helpful in making use of advantages while avoiding disadvantages, in regulating the farming season, in making the most of strengths while avoiding weaknesses, and in promoting high output from two crops. Generally speaking, by intercropping corn, the sowing season

can be advanced by from half a month to 20 days or more, not only lengthening the usable growing time, but also moderating the hectic conflict between the summer harvest and summer planting in farmwork. Additionally, waterlogging of sprouts can be avoided, and full use made of precipitation during the raining season to promote growth and advance ripening, and to guard against the shrivelled grains in the late crop that are caused by low autumn temperatures, to win a high output. Surveys show a general increase in yields of from 15 to 20 percent as compared with flat sown multiple cropping, and in Yantai Prefecture, the increase in yields was 30 percent. As a result, intercropping has become a dominant form of farming for summer corn in this region. During the past 2 years, in order to adapt to the mechanization of agriculture, some places have advocated changing the intercropping in the north China region to two crops flat sown, one after the other. In fact, some places have already changed millions of mu of intercropped wheat and corn. But owing to the delay in the season, which caused a reduction in corn yields, they had no choice but to change back. Naturally, when seasons permit, flat sown multiple cropping has the merits of saving labor and being suited to mechanization. These are shortcomings existing in intercropping. The future will require further perfection on the principle of a combination of farm mechanization and agronomy. But until there are new methods, in order to increase grain output it will still be necessary to select the optimum intercropping system to adapting general methods to local situations, to consolidate them very quickly, not change them capriciously, and gradually standardize them. Third is the problem of a multiple crop system. In view of China being a country of large population relative to available land, and considering its superior natural conditions, adapting general methods to local situations for the development of a multiple crop system, to increase the multiple cropping index, and improve crop output is a major way to develop China's agriculture. In most places in north China that have developed a system of two crops per year, increased output has resulted. Some places, however, have had problems, principally from making the area for "three sowings and three harvests" a little too large within a period of time. Arrangements were not properly made for the third crop, and this caused a drop in output. In Hebei Province, 14 million mu was multiple cropped during the highest year, and in suburban Beijing between 2 and 3 million mu was multiple cropped. This was more than half the grain growing area. In some places where natural conditions were unsuitable or production conditions were not right, decreased outputs resulted. Quite a few places have made readjustments during the past 2 years. Problems requiring attention are not thinking in terms of absolutes, and general promotion and bludgeoning regardless of conditions, all of which are wrong. In the course of readjustment, through the summarization of the lessons of experience, Beijing affirmed its achievements, and negated the pointless ones for further perfection and increases. They decreased to about 2 million mu the former 3 million mu of "three sowings and three harvests," and readjusted to pulses and green manure the gaoliang and corn formerly grown as a third crop, and which require long growing periods, to institute "three sowings and three harvests." Two interplanted crops, two flat sown crops, and the growing of three crops in 2 years, all existed at the same time. This rather suits the actual circumstances prevailing in the Beijing suburbs, and consequently increased output has resulted.

2. Need to give attention to the study of economic policies. Central government leadership comrades have frequently emphasized that near term development of China's agriculture will depend on policies and science. Readjustments have to be made in crop systems and crop patterns, and both must be relied upon as well. As a result of this inspection and discussion, everyone had a further perception of this problem. For example, the crop patterns for cotton and oil seed crops in Shaanxi was to have been readjusted for many years, but nothing has been done about it. Another example is intercropping soybeans with corn, a traditional Chinese farming method. Because of the ridiculous prices paid, this practice has been in decline for many years. During the last 2 years prices have been raised, and the planted area has also revived. In short, price policies, procurement policies, and the various forms of a system of responsibility for production currently being promoted everywhere can have a direct impact on the building of a rational farming system. They should be examined and studied, and problems in them gradually solved in order to help readjustment work.

3. Intensification of scientific research. For many years research units and agricultural schools have done a great amount of work on reforming the farming system in close combination with production realities. They have conscientiously summarized the experiences of the masses and actively launched scientific research to win quite a few accomplishments, which have been or will play a very good role in production. It was clearly seen in this inspection that as the farming system is reformed and developed, numerous new problems requiring further research appear. Examples include rational zoning of the farming system, standardization of farming, priority methods for crop patterns, breeding of early maturing, disease resistant and high yield varieties, problems in culturing techniques for high yields in different farming systems, and all kinds of farm machines suited for intercropping and flat sown multiple cropping, all of which require research. However, current research work is still very ill suited to these problems, and many problems exist in organizations, personnel and funds for each research, which require appropriate readjustments and strengthening.

9432
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ORTHODOXY OF NONCOLLECTIVE PRODUCTION PRACTICES QUESTIONED

Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese No 5, 23 May 81 pp 60-62

[Article: "Excerpted Remarks From the Seminar of the Beijing Municipal Economic Society on Fixing Output Quotas on a Household Basis"]

[Text] On 21 December 1980, the Beijing Municipal Economics Society convened a seminar on the rural economy where the topic discussed was problems in fixing output quotas on a household basis. Participants in the seminar numbered more than 20 agricultural economic researchers, educators, and those engaged in practical work. Comrades attending the seminar had, for the most part, done penetrating investigation and study of rural villages; therefore, their remarks were closely linked to rural realities. Excerpted remarks are published below.

Zhou Cheng [0719 2052]: Theoreticians and economists are very interested in problems of fixing output quotas on a household basis, and their discussions are just unfolding. Some people suppose that in fixing output quotas on a household basis the relationships among peasant households are not something to be taken lightly; thus, fixing output quotas on a household basis is a new form of collectivization. Some people believe that fixing output quotas on a household basis is an individual enterprise tacked on to the collective economy, and is a special form of a system of responsibility. Some people suppose that practice of fixing output quotas on a household basis means "working on one's own" and that it signifies the failure of socialist reform of agriculture. Some people also feel that one should not regard it as individual economy, but should actively lead in promoting what is beneficial and abolishing what is harmful.

Li Jinghua [2621 7231 5478]: (Political Research Office, Ministry of Agriculture). Anhui Province was earliest with fixing output quotas on a household basis. It is almost 40 percent there. In Guizhou it is 50 percent, and in Gansu 60 percent. Reportedly in 15 percent of the country, institution of fixing output quotas on a household basis is relatively suitable. The spirit of the Central Committee is "three reliances," and areas can fix output quotas on a household basis while other areas do not have to. What is the nature of fixing output quotas on a household basis? Right now there is no unanimity of views. There is a general feeling that practice of four unifieds is not a system of responsibility and that large scale fixing of work quotas is not a system of responsibility. In fact, there is a great amount of large scale fixing of work quotas on a

household basis, and both commune members and cadres feel this is simple and easy to handle. Moreover, the degree of increase in output is about the same for the two.

Chen Yizi [7115 0001 1864]. We went to Anhui, where we investigated for 3 months. We went to 14 counties in areas of different kinds, and saw various different forms of agricultural production management. The actual way of doing what was generally termed fixing output quotas on a household basis differed very greatly. There was partial fixing of output quotas on a household basis and total fixing of output quotas on a household basis. In the institution of "several unifieds," there was not much controversy; when there was total fixing of output quotas on a household basis and no institution of "several unifieds," the masses termed the practice "fixing work quotas on a household basis" (or "small fixing of work quotas,") which aroused the greatest controversy. However, the peasants most welcome these forms, and other forms are now changing toward these forms. In a small number of places what is termed "fixing output quotas on a household basis" is really working on one's own, and what the masses term "working on one's own, is actually fixing output quotas on a household basis. One view of fixing output quotas on a household basis is like the attitude toward the peasant movement in Hunan at one time when some said it was very good and some said it was very bad. Another view is like the arguments "using the book" at one time, when the book and practice were in conflict. However, a saying and a phenomenon is prevalent of "the peasants want output and the cadres want an orientation."

Right now the question is not whether or not one accepts a certain form, but rather how to give guidance to bring about healthy development.

For many years we have been in the habit of using certain theories to tailor life rather than to use practice to examine theories. The habit of using some form to encompass society and derive a general conclusion overlooks beginning with a large amount of facts to draw a scientific inference. Engels said, "It is not when the natural world and mankind agrees with a principle, but rather only when the principle agrees with the natural world and the circumstances of history that it is correct. ("Natural Dialectics"). This is a fundamental question for us theoreticians to set to rights. Therefore, I believe it is not possible to talk about fixing output quotas on a household basis as matters stand.

Following the Third Plenary Session, the situation in rural villages took a great turn for the better, and establishment of systems of responsibility for production increased output greatly as compared with the time before they were established; increases in production being generally greatest from the fixing of output quotas on a household basis. I have learned three things from this. (1) The broad masses of peasants have a feeling of exhilaration about this second liberation. In many places where formerly numerous methods brought no success, now model fields have been planted. For the backward rural villages in the land, the potential is also in the rural villages! The slow development of our agriculture results not from a large number of people relative to available land, nor from lack of experience, nor even from lack of funds, but from problems with programs and policies. Reports from everywhere in Anhui say that life is not as good as it had been in the period immediately following Liberation. An old comrade

in Chaohu Prefecture said that the livelihood of 50 percent of peasants was not as good as before Liberation, and that for 100 percent it was not as good as for the years 1955 and 1956. Some peasants said they had not had full stomachs for more than 20 years, but they had eaten their fill during these 2 years. So 1,000 points or 10,000 points, whether the peasants have enthusiasm is the first point. (2) The appearance of the "contract system" has far reaching significance for the development of agriculture in China. For the moment, it can use administrative methods to regulate agriculture, gradually changing to use of economic methods; it also places the peasants, the collective, and the country in an equal position for exchange at equal value. In long range terms, it will enable change to a truly new type cooperative economy of voluntary participation and mutual benefit, away from an administrative and economic system organized on the basis of administrative methods and an administrative framework and natural village and blood relationships, which cannot fail to be characterized by natural economy and a feudal patriarchal clan system. (3) The Chinese peasants have found a good form for arousing individuals and developing the aggregate. When we spoke of individual initiative in the past, we were criticized as capitalist, when, in fact, unless there is individual initiative, where will collective initiative come from? The problem is how to find a method whereby the individual and aggregate welfare can be developed in coordination. Comrade Deng Zihui [6772 1311 1863] said, "Fixing output quotas on a household basis is a great creation of the Chinese people," and this is the truth.

I feel that "fixing output quotas on a household basis" has made "three breakthroughs" in the development of China's agriculture. First it broke through Stalin's collectivized model. Formerly, the standard model for the socialist transformation of agriculture was Stalin's collectivization, yet Marx, Engels, and Lenin never spoke of any "collectivization" but only about "cooperation, alliance, and coordination," for which prerequisite conditions are vastly different. The agriculture of Yugoslavia is still another model. We still cannot give a scientific explanation for how the practice of the broad masses of Chinese peasants broke through the Stalin model. Second was the breakthrough in the framework of the administrative and economic system. Following criticism of "lily-footed women," application of administrative methods to transcend agricultural systems established in stages and containing a feudal color began the transition to a truly cooperative economy. The third breakthrough was in the a priori administrative structure of "large in size and collective in nature" to seek an optimum model of the maximum output from the minimum investment in accordance with what is natural in agriculture and development toward pluralization of economic laws.

In the course of my investigations, in virtually every place I encountered the following three theoretical questions about socialism. The first was the stage character of socialism and the question of which stage we are in; the second was the question of conditions for the transfer to public ownership and the process whereby it will be realized; and third was questions about understanding planned economy and putting it into effect. Unless these major questions are resolved, we will be hard put in the future to avoid committing "leftist" errors. We must have courage about our theories and explore that which we do not yet know.

Yu Yingshi [0060 5391 1102] (Rural Village Work Department, Beijing Municipal CCP Committee): Fixing output quotas on a household basis objectively exists, but I fear it will not work. Right now fixing output quotas on a household basis seems like a bastard child. I believe that if it is clarified in theory, will the present stage permit working on one's own? The issue of fixing output quotas on a household basis can thus be readily solved. Still, mechanization levels in the Beijing suburb is high, and if you were to permit the people there to work on their own, they would not want to. That would cut their link to the production teams, and they don't want that. Production organizations are like wearing shoes. Why should everyone have to wear the same size? There has to be adaptation to people and to locales. Hardship households where production conditions are fairly poor desire the fixing of output quotas on the basis of households.

Once output quotas have been fixed on the basis of households, every family will intercrop melons, vegetables, and beans on the piece of land it works. This will solve the problems of having vegetables to eat, which has been so difficult of solution in the past, and it will also solve the problem of eating grain sold back to producers by the state. If output quotas are fixed on the basis of households, this problem will be solved.

Wang Shaoguang [3769 7300 0342] (Rural Finance Department, Ministry of Finance): We conducted an investigation in Hebei Province where the fixing of output quotas on a household basis is very much welcomed by the peasants. One production team has eaten grain sold back to the producers for 19 years. After output quotas were fixed on a household basis, it sold the state 500,000 jin of grain. In some poor villages, no one has built a house for 20 years, but after outputs were fixed on a household basis last year, quite a few families have built houses this year. As a result of the fixing of output quotas on a household basis, the masses truly see some hope. It now seems that poor places welcome the fixing of output quotas on a household bases, but wealthy places do not. Some rich production teams with yields of 1,500 jin per mu water their wheat 11 times in a season and apply 100 jin of chemical fertilizer per mu. Commune members cannot do this, so they do not dare to contract fixed output quotas. They therefore contract for small segments of work instead.

Yang Jinyun [2799 0513 4596] (Investigation and Research Office, Ministry of Agricultural Machinery): Following the fixing of output quotas on a household basis, three new situations appeared in farm machinery operations. First was contracting of machines to individuals. Guizhou Province began this in 1978, and now every province has it. Contracting of machines to individuals also takes many forms such as annually contracting to turn over funds to higher authority, or rental of tractors to permit tractor drivers to work on their own. Second, tractors are sold to individuals. In Guizhou and Fuzhou, instances of this kind are numerous. Some provinces believe that reversion of the means of production to individuals is capitalistic in nature, when actually, following sale of the tractors, they were used more, earnings were greater, and results were good. Third, several people got together to run a tractor station. In Anhui Province, six people ran a tractor station and hired two people. The work attitude was good, and it was better than when run by officials.

Yuan Shichou [5913 1102 3985] (Beijing Municipal Academy of Agricultural Sciences): 1. The question of the nature of ownership is in some disarray. The nature of fixing output quotas on a household basis should be looked at in terms of whether it benefits promotion of the development of production. 2. What is the basis of cadre and commune member initiative in production teams at the present stage? The fundamental question is whether private ownership concepts are legal or illegal. Communists stress public ownership, but in real life, public ownership concepts cannot advance the development of production. 3. Is the socialism of the past several years utopian in nature? (In agriculture, in particular) production has an objective character and a stage character. For the past 30 years, we have meddled excessively in the workers' and peasants' production struggle, and have caused serious losses. 4. Success or failure of agriculture is related to national management organizations. At the present time there are five major ministries giving attention to agriculture, and that is most unfitting. Some of the masses used to say that the Ministry of Agriculture gives blind guidance; the Ministry of State Farms and Land Reclamation is a ministry that loses money; the Ministry of Forestry is a ministry that cuts down trees; and the Ministry of Agricultural Machinery is a ministry of scrap machines. If a water buffalo is better than a tractor, then why insist on mechanization, and use it to adorn the superiority of socialism? Agriculture is a totality. None of the five ministries can control another, and agriculture is dismembered.

Wang Zhengxiao [3769 2973 2400] (Beijing Municipal Price Bureau): A look at the fixing of output quotas on a household basis from the angle of prices. Right now small farm products are becoming scarcer and scarcer, as for example, mother chrysanthemums, and dandelions. The price of medium farm products has skyrocketed, as for wood fungus, and day lilies. Output of field crops increases but earnings do not. Now costs of producing farm products have generally risen and "steaming everything in a large pot" does nothing for lowering costs. Fixing output quotas on a household basis is, in fact, a system of responsibility issue. A large industrial plant can assign responsibility to individual persons, and when agriculture is in the form of a handicraft industry, it must fix output quotas on an individual, a worker, or a household basis. Large military contingents used in warfare would only destroy production; this is an economic law.

Yao Lanfu [1202 5663 6010] (Beijing Farm Mechanization Institute, Ministry of Agricultural Machinery): Fixing of output quotas on a household basis is a penalty paid for the former extreme-leftist line in agriculture, and it exposes a whole series of problems in agriculture. Do the peasants know of the superiority of collectivization? Are not the movies about the golden road [to socialism] very good? I believe that the form of ownership should be of many forms with many forms of an ownership system coexisting. We should use the superiority of collectivism to attract the peasants to take the collectivized road. We should use competitive means and not use repressive means or administrative means to develop production. Otherwise, in the end, the peasants will negate what you do.

Hong Wujin [3163 3527 6855] (Beijing Agricultural University): A uniformly distributed fixing of output quotas on a household basis is a system of responsibility matter, and an issue of the form of operations. On the basis of realities, there can be fixing of output quotas on a team basis, on a worker basis or on a household basis. Large scale fixing of work quotas on a household basis is ancillary to, and supplementary to, the socialist economy; it is not capitalism.

This is because: 1. land cannot be sold; 2. labor cannot be hired and there is no exploitation of others; 3. there is a handing over to the state through requisition purchases, and a handing over to the collective of accumulations; 4. there is self-sufficiency in goods. In a situation in which ownership by all the people, and ownership by the collective are absolutely dominant, that some peasants who have not tasted the sweetness of a collective economy want to institute large scale fixing of work quotas is inevitable.

Wang Songpei [3769 2646 7198] (Economic Institute, Social Sciences Academy): The problem of the nature of fixing output quotas on a household basis has not been solved. The divergence is whether it is a system of responsibility or dividing up the fields for work on one's own? This is a struggle between "true name" and "beautification." Can large scale fixing of work quotas slip into working on one's own? I believe it can. There is an inevitability in the appearance of the fixing of output quotas on a household basis, and there is an inevitability in sliding into working on one's own. For example, a bad job of the collective economy and a loss of confidence in cadres on the part of the masses are reasons precipitating the large fixing of work output quotas. Similarly, they are reasons for sliding into working alone. Is the fixing of output quotas on a household basis an expedient measure or is it to exist for a long time? If one supposes that it is the same as working on one's own, of course, it can only be an expedient measure. But if one recognizes that it is a system of responsibility, he will naturally come to the conclusion that it will exist for a long time.

9432
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BRIEFS

INCREASED FARM LOANS--This year the Fujian Provincial Bank of Agriculture has increased farm loans to rural communes and brigades, and to commune members in support of agricultural production and diversification. At the beginning of the lunar year, the Fujian Bank of Agriculture organized more than 5,100 banking and credit cooperative cadres from around the province to go down to rural communes and brigades throughout the province to help communes and brigades implement systems of responsibility for agricultural production, to set up economic contract systems, to formulate production plans, to widen avenues for sideline industries, to help them assemble capital and arrange for use of capital, granting timely loans to support spring farming and commodity production. By May, more than 322 million yuan had been issued throughout the province as farm loans of one kind or another, a 22.9 percent increase over the same period last year. Accompanying institution of systems of responsibility for production has been tremendous increases in loans by individual commune members. By May, more than 43 milluon yuan had been loaned them, 5.14 times the amount for the same period last year. During the first five months of this year, agricultural savings in the province had increased by more than 143 million over the same period last year for a 25.2 percent increase and an all-time high. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 24 Jun 81 p 6] 9432

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HOUSING BOOM IN COUNTRYSIDE CONTINUING

Guangzhou NANFANG RIBAO in Chinese 22 Jun 81 p 1

[Article: "Housing Boom in Guangdong Countryside"]

[Text] Since the Third Plenum, people coming back from the countryside have always talked excitedly about the many new buildings in the rural areas. A recent survey of 580 peasant households in 59 communes in 20 counties conducted by the provincial statistical bureau indicates that on average one of every three households constructed a new home last year.

Housing construction and market town construction have developed at an unprecedented rate over the last 2 years. At a provincial housing construction conference held in Fanyu County in April of this year, it was preliminarily estimated that nearly 1 million peasant households have constructed housing with floor space reaching approximately 40 million square meters, excluding buildings for agricultural, industrial and sideline production purposes. In the Dashantian area of Zhongshan County, the peasants who used to live in thatched cottages for generations, have constructed housing with more than 600,000 square meters of floor space over the past 2 years, topping the total for the previous 10 years. At present more than 14,000 commune families have moved into their new brick-and-tile homes. By the end of last year, 596 of the fishing families or more than 60 percent of total boat people in Shanshui County fishing communes have settled down on the banks. Compatriots of Li and Miao nationalities inhabiting Leluo Commune in Ledong County have gradually changed their life of cave dwellers since their liberation and are moving into their new brick-and-tile homes. They constructed nearly 100 new homes with an area of 10,000 square meters on seven hillsides. According to statistics of experimental counties, 12 percent of the peasant households constructed new housing last year in the counties of Fanyu, Chaoan, Ledong, Dongguan, Qionghai, Meixian, Gaoyao, Shunde and Lechang.

To meet the new upsurge of housing construction, a number of prefectures and counties have set up special organizations to help commune members technically and in the matter of material resources and design to construct beautiful, dignified, space-saving, and low-cost homes. Many localities have adopted measures such as private construction and public aid, mutual aid between commune members, unified construction, and unified planning to speed up housing construction. Indiscriminate use of farmland for housing as witnessed in some localities is now being rectified in accordance with the urgent State Council circular.

9780
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FARMLAND BEING USED FOR HOUSING

Guangzhou NANFANG RIBAO in Chinese 20 Jun 81 p 1

[Article by NANFANG RIBAO commentator: "Prompt Solution to the Problem of Farmland Being Used for Housing Urged"]

[Text] With the rural economic situation taking a turn for the better in recent years, housing construction in the countryside is thriving as never before since the founding of the republic. It is the inexorable trend of economic growth and gradual prosperity of peasants in the rural areas and is a good thing. But, indiscriminate use of farmland for housing construction and developing commune-brigade enterprises is so serious that we should attach great importance to the problem. Upon discovery of this problem, Xuwen County has taken timely measures to put a stop to the indiscriminate use of collective farmland and has achieved good results. Other localities can use their methods as a frame of reference.

Farmland is very valuable in our province with less land in relation to population--a little more than 0.8 mu of land per capita. Along with the population growth, the contradiction between land and population is bound to become increasingly acute. Failure to bring the use of farmland under control will not only affect the present development of agricultural production and improvement of people's livelihood but also bring disastrous consequences which will not be remedied for years to come and which will trouble future generations. Under no circumstances may we treat lightly this vital problem which affects the overall situation and the long-term interests of the people.

With a view to rectifying the present indiscriminate use of farmland that has appeared in a number of localities, we should penetratingly publicize the urgent circular of the State Council and teach the rural cadres and commune members to correctly handle the relationships between the individual and the collective and between the immediate and long-term interests, take account of the overall situation, uphold the collective interests and solve this problem fully. At the same time, we should make it perfectly clear to the masses that when constructing collective or individual housing, whether in the rural areas or in cities and towns, they must implement the provisions laid down in the circular of the State Council concerning the use of farmland for housing, and

subordinate themselves to the unified planning of housing construction in their localities. Communes and brigades that establish enterprises and commune members who construct housing should utilize where possible hillsides, wasteland, old house sites, and vacant village land, and promote building of multi-story structures. The use of farmland for housing must be examined and endorsed by production team or brigade and approved by the commune management committee. Residents in cities and towns wishing to construct housing must follow the procedures for application and approval and must not buy or use land on their own without authorization for housing construction purposes. Those state organs, organizations, enterprises and units, military units, and collective enterprises set up by cities and towns, that have real need of collective land in the rural areas must go through the land requisition procedures according to the provisions and reduce the area of land requisitioned as far as possible.

After instituting the systems of job responsibility like contracting production to households and contracting work to households in various localities, it frequently happens that peasants have constructed housing on their contracted farmland. This practice is not allowed. All localities should reaffirm to commune members that the land of rural communes and brigades belongs to the collective, that commune members have only the right to use the housing sites, private plots, private hills and contracted farmland allocated to them, and that they are not allowed to rent to others, buy, sell, or transfer without authorization these types of land, nor are they allowed to construct housing, dig graves, open mines, make bricks and tiles on the contracted land and private plots. It is wrong for some people to regard the contract land as their private property and use it at will. This practice should be resolutely rectified and sternly dealt with according to the circumstances of each case. In the case of farmland, particularly paddy field already used for housing construction without having been planned and approved by brigades and production teams, where housing construction has started but is not completed, those concerned should be educated and ordered to move construction to the housing sites planned by production teams under unified plans; where housing construction is completed and cannot be moved elsewhere, collective losses must be made up in addition to assuming the task of public grain purchase. From now on, those who recklessly use farmland for housing, rent farmland to others, buy or sell farmland and transfer collectively distributed land without authorization should be subjected to administrative disciplinary measures and economic punishment (suspension of construction, dismantling, compensation for losses, return of land, confiscation of unlawful income, and payment of fines) according to the circumstances of each case, irrespective of whether they are state cadres or commune-brigade cadres or the masses. In serious cases where the offenders took the lead and incited use of farmland for housing and refuse to mend their ways, they will be prosecuted according to the law. All localities should take special care to teach their basic-level cadres and state cadres living in the rural areas to take the lead in implementing the urgent circular of the State Council and act in an exemplary way to educate the masses. This line of action will certainly produce very good results.

We are convinced that, provided the leading bodies attach great importance to the problem and take effective measures, indiscriminate use of farmland for housing can be quickly curbed.

9780
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SILKWORM COCOON HARVEST INCREASES

Guangzhou NANFANG RIBAO in Chinese 18 Jun 81 p 1

[Article: "Situation Is Favorable to Silkworm Cocoon Production in Guangdong"]

[Text] The situation is very favorable to silkworm cocoon production in our province this year: more than 135,700 dan of silkworm cocoons were produced in the first and second crops, a 24-percent increase over the same period last year. The increase was 4.3 percent for the first crop and 41 percent for the second crop, reaching record levels since the founding of the republic.

The first and second crops of silkworm cocoon production in our province this year were characterized by: 1) More new mulberry fields were put into production. Twenty-five thousand mu of mulberry trees were planted in our province last year, and their leaves were picked in spring this year to feed silkworms. 2) Unprecedented growth in silkworm cocoon production. Calculated on the basis of the two crops, all prefectures and counties with sericulture industry have increased production. Among the prefectures and counties with a more than three-fold increase in production in the first crop were Shaoguan Prefecture, Lianjiang and Yangchun counties; those which more than doubled production include Zhanjiang Prefecture, Taishan and Dongguan counties; production increased more than 40 percent in the silkworm cocoon producing centers of Nanhai, Zhongshan, Xinhui and Huazhou counties. Total output of silkworm cocoons in the first and second crops has increased more than 10 percent in Shunde County which accounts for nearly half of the total provincial output.

Why was the situation particularly favorable to the first and second crops of silkworm cocoon production this year? Apart from ideal weather and ample rainfall, the decisive factor was the power of policy. In March last year, the provincial people's government adopted an encouragement policy with regard to silkworm cocoon production. This policy stimulated the production enthusiasm of peasants, particularly in the new silkworm cocoon areas. The new silkworm cocoon areas made rational adjustment of production arrangements while grasping grain production. More than 40,000 mu of mulberry trees were planted in the winter and spring. In six old silkworm cocoon-producing counties including Shunde, economic crops are concentrated and income from sericulture industry

is relatively low. In light of these circumstances, beginning this year the provincial people's government lowered the silkworm cocoon production base for these six counties, thus enabling the communes and brigades there to gain more material benefits from silkworm cocoon production. This plus the economic measures taken by a number of communes and brigades to stabilize and promote production have protected the enthusiasm of the masses. In addition, various systems of job responsibility have been introduced in light of local conditions. It is another reason for growth in silkworm cocoon production. In Lianjiang County, some specialized teams or specialized households fulfilled their annual production targets in the first and second crops.

9780
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STATUS REPORT ON ECONOMIC CROPS, AFFORESTATION, FAMILY SIDELINES PRESENTED

Hong Kong ZHONGGUO XINWEN in Chinese 24 Jun 81 p 3

[Article by Zhongguo Xinwenshe Correspondent Zhong Chengxiang [6945 1794 4382]: "Thriving Development This Year in Guangdong's Agriculture, Forestry, Animal Husbandry, Sideline and Fishery Industries"]

[Test] This year Guangdong Province has launched active diversification for vigorous development of its agriculture, forestry, animal husbandry, sideline and fishery industries.

The province's bumper harvest in agriculture last year improved the grain supply situation, so that every jurisdiction in the province has been able to devote more manpower and material for diversification of the cultivated land. Development of economic crops this year has been conspicuous everywhere in the province. Sugarcane has been planted on 3.25 million mu, 680,000 mu more than last year. The major peanut production areas of Shantou, Zhanjiang, Huiyang, and Guangzhou have expanded peanut acreage by a total of more than 300,000 mu. The area devoted to the growing of jute, amberi hemp, and tobacco has also been enlarged this year.

Accompanying the further implementation of rural economic policies and the general institution of various forms of a system of responsibility for production has been arousal of peasant initiative in production. As a result, various economic crops have been planted on time and intensively cared for; growth has been very good. Fine Guangdong citrus fruits and lichees have also seen development. In the Guangzhou and Foshan area, lichees are now going to market, and a bumper harvest of watermelons has been happily harvested to fill markets throughout the province. Prices have fallen since last year.

This spring Guangdong afforested more than 2.7 million mu, already overfulfilling afforestation plans for the entire year. Aquatic and oceanic hatching industries have also developed, newly opened fish ponds throughout the province this year covering more than 20,000 mu. Quite a few cities, towns and rural villages have started raising of aquatic products by families, using either low-lying land or building ponds in front of and behind houses to raise fish. Statistics from 10 counties and municipalities including Zhongshan, Panyu, Xingning, and Yangchun show more than 100,000 households going in for family raising of aquatic products. Guangdong had a decline this year in the number of hogs on hand, but great development has occurred in domestic fowl. Everywhere large quantities of chickens, ducks, and greese have gone to market to enliven both buying and selling.

Family sideline industries such as drawnwork and bamboo plaiting, and commune and brigade enterprise production has become daily more flourishing. The craze to build new houses that has arisen in cities and the countryside has made for particularly rapid growth of commune and brigade enterprises dealing in building materials such as bricks, tiles, and stone, and commune and brigade enterprises accepting materials from abroad for processing have also become more and more numerous.

9432
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BRIEFS

GUIZHOU BUMPER RAPESEED HARVEST--Guizhou reaped a bumper rapeseed harvest for the fourth successive year. The gross output of rapeseed in Guizhou amounts to 477.06 million jin, an increase of 37.3 percent compared with the output in 1980. A new record has again been set. The bumper harvest of rapeseed has played an active role in enlivening the rural economy, improving edible oil supply to rural and urban areas and promoting the four modernizations. After reaping the bumper rapeseed harvest, the peasants actively sold rapeseed to the state. Some 320.22 million jin of rapeseed had been procured throughout the province by 20 June, overfulfilling the procurement plan by 23 percent. [HK180944 Guiyang Guizhou Provincial Service in Mandarin 2315 GMT 3 Jul 81]

CSO: 4007/533

BRIEFS

PEASANT ASSOCIATION--The Hubei Provincial CCP Committee issued a circular on 24 June announcing that the first congress of the provincial peasant association will be held in December this year. According to the circular, the main items on the agenda of the congress will be examining the report on the preparatory work for the provincial peasant association and on its work in the future, discussing the draft provisional constitution of the provincial peasant association and electing the first committee of the provincial peasant association. About 1,000 delegates will attend the congress. The circular urges that good work be done in preparation for this congress, including the selection of delegates to attend the congress. [OW290149 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 26 Jun 81]

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WAYS OF INCREASING SOIL PRODUCTIVITY DISCUSSED

Luda LIAONING NONGYE KEXUE [LIAONING AGRICULTURAL SCIENCES] in Chinese No 3, 15 Jun 81 pp 39-42

[Article by Lu Xinlai [7120 2946 0171], Shenyang Agricultural Academy, Zhang Rende [1728 1804 1795], Liaoning Provincial Bureau of Agriculture, and Xiao Zuyin [5135 4371 7113], Shenyang Agricultural Academy: "A Look at 30 Years of Development of the Farming System in Liaoning Province In Terms of a Combination of Soil Use and Soil Nurture"]

[Text] The farming system means the crop system, which is the system of farming techniques that mankind uses under certain social, natural, and economic conditions. Any rational system of farming must proceed from needs and capabilities, handling well the relationships among the weather (climate), the land (soil), and plants (crops), making rational use of the soil and satisfactorily handling the soil to expand biological pulmonary circulation, and decrease geological systemic circulation to create an economic balance in the fields, and a renewal of soil fertility, thereby achieving a close linkage between use and nurture of the land. The building of rational farming systems everywhere on the basis of the zoning of agricultural regions and the adaptation of general methods to local situations is a fundamental ingredient in realization of the four modernizations.

The farming system is composed of a series of agricultural techniques for using and nurturing the land, and may be generally divided into the planting system and the soil management system. The planting system includes crop distribution, rotational cropping, crop patterns and planting forms, reflecting timing and arrangements for the planting of crops. The soil management system includes cultivation of the soil, fertilization, irrigation, and such supporting measures reflecting organic, nutrient, and moisture replenishment levels in farming the soil, as well as the regulation and control of elements such as water, fertilizer, air, and heat. When the two are well combined, the crop's requirements can be satisfied and high yields are promoted. It is also possible to take good care of and restore soil fertility to assure consistent yields. Since ancient times, mankind has used different methods of using and nurturing the soil so that the farming system would be repeatedly replenished and developed, thereby forming systems for taking land out of production, systems of allowing land to lie fallow, rotational cropping systems, and intensive farming systems.

(1) At the present time, the farming system in Liaoning Province is basically one of rotational cropping. It consists mostly of the rotational cropping of grain (grass family crops) and beans (pulse family crops), and grain and green manure, supplemented by fertilization and soil cultivation for a combination of use and nurture. Some places where there are large numbers of people relative to available land and where intensive farming is conducted are in a process of transition to a system of intensive farming. Land use is tending toward intensification (such as two crops per year or intercropping and multiple cropping). Soil management is also moving toward intensification (such as increased fertilization, irrigation, intensive farming, and garden-style cultivation of farmland). However, in overall terms, the farming system of Liaoning Province remains unfixed and is still in process of change.

A review of changes in the farming system of Liaoning Province during the past 30 years develops along the following lines.

The farming system: Wetlands and paddy field area has increased from 970,000 mu in the period right after Liberation to 5.78 million mu. The corn growing area, with its quite high produciton potential, has expanded from 10.26 million mu of the period immediately following Liberation to 20.83 million mu. The two crops per year area of wheat-sunflower, wheat-beans, rape-sunflowers, potatoes-corn now amounts to 1 million mu. Changes have also taken place in the form of farming, with an increase in intercropping and a virtual eradication of mixed planting. Approximately 300,000 mu of wheat and corn are intercropped, and the multiple cropping index has increased from 102.2 to 105.8 percent.

The soil cultivation system. Tractors now number 85,726 of various sizes, medium and large models numbering 39,993. Each tractor is responsible for cultivating an average 1,490.5 mu. Cultivation using animal power is gradually giving way to mechanized cultivation. During the period immediately following Liberation, plowing was done to a depth of only 12 to 14 centermeters, but now it has increased to a general 16 to 20 centimeters. The area sown by machines is more than 11 million mu (of which careful sowing of small amounts of seed is done on 2.44 million mu). Growing of plants on raised ridges has been promoted on 3.52 million mu, and banking of soil around plants following flat sowing has been promoted on 4.44 million mu. On 2.88 million mu there is cultivation for deep loosening between plants. Farm machines and farming techniques have been combined more closely to make a very good start.

The fertilization system: Development has taken place from fertilization solely with barnyard manure to its use in combination with chemical fertilizer. Barnyard manure applications have increased from 2,000 to 3,000 jin per mu to between 4,000 and 5,000 jin per mu. Use of chemical fertilizer averages 85.6 jin per mu. Some communes and brigades have switched from row application of barnyard manure to spreading it and have changed from topdressings of chemical fertilizer during the growth to fertilizing deeply before sowing is done, and giving attention to sensible augmentation with nitrogenous, phosphate, and potash fertilizer.

Along with reforms in the farming system during the past 30 years has been construction of water conservancy projects for farmlands, use of high yield varieties, and sensibly close planting, which have increased Liaoning's total output of grain and beans from the 10.26 billion jin of 1950 to the 23.88 billion jin of 1979.

In the course of changes in the farming system, Liaoning Province has also exposed numerous problems. Most conspicuous of these problems is the shortage of fertilizer and water, which frequently becomes a limiting factor in increasing output. Dalian Prefecture has substantially suitable light and heat conditions for growing two crops a year, yet the two crop area fluctuates around 300,000 to 500,000 mu, the key reason being fertilizer and water, and insuffiicient soil fertility. Grain production in Liaoning Province during the past 30 year has formed an inconsistent wave shape. In a large context, the single crop structure of agriculture has destoyed the ecological balance within agriculture. In a small content, a problem exists in emphasis on use and slighting of nurture of the land, caring only for the present and ignoring the long range, with no serious attention being given to capital construction of farmlands and the day-to-day ecological balance of the fields. As a result, low temperatures, droughts and floods, winds and hailstones can neither be controlled in the sky above nor brought under control on the earth beneath, so serious calamities strike regularly.

(2) A combination of use and nurture is widely understood to mean use of resources and protection of resources, the nub of which is use of the land to nurture the land and maintenance of the ecological balance of the fields. The land is a resource and is, at the same time, a production base. The continuance of agricultural production requires that the soil have a special significance greater than that of other resources. In the total production process, the crops themselves and farming methods have different and enduring effects on soil productivity. These effects exhibit the unity of opposites in use and nurture of soil productivity. Used much and nurtured little, soil fertility will degenerate. Only when use and nurture are combined, and nurture maintained more than use, can soil fertility begin to be renewed, and a foundation exist for continuous expansion of further production.

What is the situation in soil use in Liaoning Province? What are the principal problems that exist? A general analysis is made using the following aspects.

1. Crop patterns are a strategic measure that prove decisive in the ecological balance of the fields. They both require a basis in the needs of the state, the collective and individual commune members and also require consideration of the capabilities of local conditions. It is also necessary to combine both the present and the long range, to study what burden the soil is capable of carrying, and methods of increasing fertility. Only in this way can the pattern be relatively stable and bring high and consistent yields. Pertinent data show that for a yield of 1,000 jin per mu of corn from a single crop, about 25.7 to 33.0 jin of nitrogenous fertilizer is required. Corn sheds few leaves and when the stubble is removed from the fields, nitrogen remaining in the roots amounts to only about 1 jin. A 300 jin per mu yield of sunflower seeds requires 55.8 jin of potash, and potash remaining in the soil on plant roots is less than 10 jin. From a 250 jin per mu crop of soybeans, because of the function of root node bacteria and inasmuch as an overwhelming majority of the leaves and roots of the beans are returned to the soil, the farmland's receipt and expenditure of nitrogen is about in balance. However, affective phosphate is used up at the rate of 4 jin per mu or more. At the present time, the corn area throughout the province has reached saturation, and individual production teams in northwest Liaoning have expanded the growing of sunflowers to an inappropriate degree. This will not only create an irrational situation between what the soil receives and what it gives, but provides diseases and insect pests opportunity to spread, posing an extremely great hazard.

Consequently, appropriate readjustment of crop patterns is fully necessary. An example is Daliutun Commune in Xinmin County where soil is poor windblown sand and salinity-alkalinity rather severe, and where grain yields are only somewhat more than 300 jin per mu. Prior to 1978 when requisition grain purchase quotas were 4.8 million jin, the commune had no choice but to plant more grain crops. In 1979, suitable policy and crop pattern readjustments were made, and in that year in addition to requisition procurement quotas of 2 million jin, the commune was able to tender to the state 800,000 jin of sunflower seeds, 1.13 million jin of soybeans, 140,000 jin of sesame seeds, 460,000 jin of castor beans, and 2 million jin of garlic. Average per capita income rose from 54 yuan in 1978 to 89 yuan. As another example, Shaheyingzi Commune in Jinxi County has 50,000 mu of cultivated land, and for several years emphasized planting of "two miscellaneous grains" [other than wheat and rice]. The commune farmed these two crops alone with no change. Following readjustments during the past 3 years, 11 mountain area production teams in the north with infertile soil expanded the growing of soybeans and peanuts. Despite a 7,000 mu reduction in the grain growing area between 1976 and 1979, total output rose 18 percent, while at the same time 900,000 jin of soybeans and 2 million jin of peanuts were harvested. In 1977 per capita income averaged 56 yuan; in 1979, it rose to 102 yuan.

2. Rotational cropping can balance use of the soils nutrients and moisture, while repeated growing of the same crop leads to a lopsided expenditure of field nutrients and moisture. Use of green manure and pasture grass in rotational cropping plays a conspicuous role in nurturing the soil. The peasants in Liaoning Province used to be in the habit of rotating crops. In recent years, however, as a result of expansion of the corn acreage and more intercropping of corn with soybeans, crop rotation has been thrown into disarray, making rotation difficult. As a result, diseases, insect pests, and weeds abound; the fertility of most plots has decreased; fertility is uneven; and crops do not grow uniformly. The Daxin No 2 Brigade in Xinchengzi District of Shenyang City has 5,200 mu of cultivated land where, prior to 1977, corn and soybeans were intercropped and total grain output ran from 2.32 to 2.84 million jin while soybean output totaled only 160,000 to 180,000 jin. After 1978, when each of the two crops was grown alone and rotationally cropped, the 1979 grain output totaled 2.77 million jin, and soybeans totaled 530,000 jin, clearly demonstrating the superiority of rotational cropping of individual crops. In the arid western parts of Liaoning Province, people are few relative to the available land; the soil is exceedingly infertile; and its organic content is frequently as low as about 0.5 percent. Rotational cropping of sweet clover and oil seed and grain crops has been shown an effective method of combing use and nurture of the land. Xiabeigou Production Team, Xiaotang Commune, Jianping County began to grow grass in 1965 at a rate of 1,000 mu per year. The grain to grass ratio was 1:1.25. In 1979, 800 mu produced a total of 300,000 jin of beans and grain, yields increased from the 45 jin per mu before grass was grown to 375 jin. At the same time the animal husbandry industry rapidly developed. Now each person averages 1 hog and 1.3 sheep, and each household averages 1 large livestock animal. The organic content of the soil increased from the previous 0.5 percent to 1.37 percent.

Fertilization is a measure for directly augmenting the organic content and nutrients in the soil to assure balanced nutrients in farmland. In 1963, Liaoning Provice used a total of 176.62 million jin of chemical fertilizer, or 28 jin per mu. By 1979, this has risen to 4,864,200,000 jin, or 85.6 jin per mu. During the past 30 years, two rather conspicuous problems have existed in the application of fertilizer in Liaoning Province. One has been no matching of the proportions of organic and

inorganic fertilizer applications, and the other has been no coordination of the amounts of nitrogenous and phosphate fertilizer used. In the case of Haicheng County, for example, between 1966 and 1968, organic fertilizer that would convert to 7,881,000 jin of nitrogen was annually applied, and inorganic fertilizer that would convert to 3,006,000 jin of nitrogen was used in a ratio of 1:0.38. Between 1977 and 1979, however, the ratio between the two was 1:2.56. In a period of 14 years, inorganic fertilizer increased by more than 10 times while organic fertilizer increased only by 64.8 percent. Between 1966 and 1968 all forms of fertilizer used converted to 10,887,000 jin, which converts to 4,358,000 jin of P_2O_5, the ratio between the two being 1:0.44, which is rather suitable. Between 1977 and 1979, this increased to 46,204,000 jin and 9,423,000 jin respectively, the ratio being only 1:0.20. Clearly an imbalance existed in the ratio between nitrogen and phosphate, and the soil in the fields seriously lacked phosphate.

4. Though cultivation of the soil does not directly increase nutrients and moisture, it performs a unique role in regulating the nutrients and moisture in the fields. As a result of cultivation of the soil, large amounts of manure and stubble are plowed under and mixed into the cultivated layer. This creates a deep, friable, and suitable cultivated layer, and regulates the activity of micro-organisms and the decomposition and transformation of organic materials so that nutrients are supplied crops in a steady stream. At the same time, in view of the spring drought and summer flooding in Liaoning Province, through flexible use of the several main links of spring harrowing and rolling, deep loosening in the summer, and cultivation in fall, spring moisture is maintained for a period of time, and spring drought is taken in hand to maintain balanced moisture in the fields. At the present time, in fields where the organic content is abundant, the tendency is toward a combination of turning, loosening the soil deeply around banked corn produced increased outputs of 4.1 and 7.4 percent respectively as compared with unloosened soil. Experiments conducted on brown soil on slopes by the Shenyang Agricultural Academy during the two year period 1979 and 1980 show deep cultivation to loosen the soil around banked corn produced yields of 7.9 and 2.9 percent more respectively than for harrowed soil that was not loosened. On fertile flatlands of rather high organic content, a change from year after year plowing to plowing one year, and only harrowing and then loosening the soil through cultivation another year not only can increase output and save expenditure of fuel for machines, but also reduces destruction of soil structure, and regulates effectiveness of the speed of mineralization of organic matter in the soil.

(3) In view of the situation in Liaoning Province, the key to realization of a combination of use and nurture and maintenance of the ecological balance of the fields lies in increasing the amount of organic matter in the soil.

Organic content of soil is a major indicator of soil fertility. This is not only because organic nutrients are complete and fertility long lasting, but more importantly because when organic matter enters the soil it promotes multiplication of micro-organisms and formation of soil structure, thereby improving the soil's physical, chemical, and biological properties. Fertilization with inorganic fertilizer alone, with each element properly matched, may temporarily increase yields. However, over a long period of time, use of chemical fertilizer alone may bring about a loss of the humus that the soil orginally contained so that the physical and chemical properties of the soil tend to deteriorate.

In the course of change of the farming system over the past 30 years, because of the frequent attention to the present, a long range view has been lacking. While looking at the top of the ground, study of elements under the ground have been ignored. Specifically, we have not come to grips with this key matter of a combination of use and nurture. As a result the organic content of the soil in most areas has declined and fertility has dropped. Tests conducted during 1975 and 1976 at Gengzhuang Commune in Haicheng County showed an 0.82-1.67 percent organic content of cultivated soil in the commune for an average of 1.39 percent. A recheck done in 1979 and 1980 showed it to be 0.72-1.86 percent, or an average of only 1.25 percent. It had dropped 0.14 percent in 4 years for an annual average drop of 0.035 percent. Another survey done in 1978 on six communes in Tieling Prefecture showed the cultivated land having less than 1 percent of organic matter to be 44 percent of the total cultivated land; between 1 and 2 percent to be 39.1 percent; and more than 2 percent to be 16.9 percent. In Dalian Prefecture, the organic content of the soil is even more lacking, generally only 0.5-1 percent. Soils in the northwestern part of Liaoning are most depleted, organic matter being only between 0.2 and 0.5 percent. Because of the reduced organic matter in the soil, the soil is seriously phosphate deficient. The Sujiatun District of Shenyang City and Haicheng County are areas in Liaoning Province where soil fertility is quite good; nevertheless, results of a soil survey show phosphate content to be very low. In Sujiatun District, soils with an effective phosphate content below 4 ppm amount to 54.1 percent of the total cultivated land, and a phosphate content of from 5-8 ppm amount to 29.54 percent. (8 ppm and above is only 14.95 percent of the total). In Haicheng County, 24.1 percent of the land is less than 15 ppm; 26.1 percent is 10-15 ppm; and 39.20 percent and 55.78 percent respectively is 5-10 ppm and greater than 5 ppm.

1. In view of the orgainic matter and nutrient situation in the farmlands of the province, we believe that if earnest attention is given the following, both use and nurture of the land can be achieved, fertility can be increased, and consistently high yields can be realized.

1. Strengthening of the technical training of grassroots level cadres, instituting a general one time training course for them in agricultural science and technology in which the comprehensiveness, continuity, and regionality of agricultural production is set forth. Make the cadre ranks fairly stable and perfect policies.

2. Use of various forms of large scale plantings of green manure and pasture grasses, and development of the livestock raising industry to bring into being and to increase sources of organic fertilizer. Readjust policies on the accumulation of manure; encourage more accumulation of manure; and accumulate manure well.

3. Make suitable readjustments in crop patterns. All jurisdictions should suitably curtail their corn growing areas, and adapt general methods to local situations to increase the wheat, broom corn millet, gaoliang, sweet potatoes, peanuts, sunflowers, and other pulse crops area. They should also determine the proportional amount of each crop to be grown, and institute rotational cropping.

4. Use every means possible to increase phosphate fertilization, giving attention to the proportion of nitrogen to phosphate. The province and municipalities should build large phosphate fertilizer plants, and mine or bring into the province from elsewhere the raw materials for phosphate fertilizer. This should be done in a directed and planned way.

5. Afforestation to protect the soil from erosion and to improve the climate and giographical environment. In addition to afforestation of mountains and hills, and ravines, forest shelter belts should also be built in plains areas to change the microclimate of farmlands.

6. Major efforts in methane gas to solve the rural energy problem and to conserve plant stalks and stems for use as fodder or for direct return to the fields.

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CSO: 4007/518

BRIEFS

TROPICAL PLANT RESEARCH ACHIEVEMENTS--After 20 years of arduous efforts during which time 1 500 different kinds of tropical plants were introduced from abroad, the Yunnan Tropical Plant Institute has scored more than 100 research successes, quite a number of which are successes achieved for the first time in China. In order to produce results in the shortest possible time, the Yunnan Tropical Plant Institute began scientific research work even before building was complete. In 1963, this institute introduced from Africa a group of butter trees [butyospernum Parkii]. Seeds from this tree will not sproud except in high temperature conditions. At that time, there were no adjustable temperature greenhouses available, so scientists used buckwheat husks to stimulate sprouting, getting a sprouting rate of better than 90 percent. Butter trees from remote Africa settled down in China for the first time. In 1976, in order to check resources of the cancer-fighting plant, Meidengmu [5019 4098 2606], researchers from this institute and other survey personnel from Yunnan Province traveled throughout southern Yunnan in 23 counties, finally discovering large sources of Meidengmu. Now this institute has developed into a scientific plant research base that boasts six special laboratories, an intermediate experimental plant, a 1,800 mu experimental farm and non-staple food production base, and more than 20,000 square meters of buildings for work and living. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 24 Jun 81 p 6] 9432

CSO: 4007/503

II. PUBLICATIONS

TABLE OF CONTENTS OF 'SHUICHAN XUEBAO' NO 1, 1981

Shanghai SHUICHAN XUEBAO [JOURNAL OF FISHERIES OF CHINA] in Chinese No 1, Mar 81 inside back cover

[Text] The Regional and Seasonal Variations of Diversity and Dominant Species of Demersal Fish Communities in the Continental Shelf of Northern Nanhai.....Fei Hongnian [6316 7703 1628], He Baoquan [0149 1405 0356] and Chen Guoming [7115 0948 6900], all of the Nanhai Fisheries Research Institute (1)

Four New Species of the Families Ophichthyidae and Neenchelyidae.....Zhu Yuanding [2612 0337 7844], Wu Hanlin [0124 3352 7207] and Jin Xinbo [6855 9515 3134], all of the Shanghai Fisheries College (21)

On the Protosalanx hyalocranius and Its Propagation in Hongze Hu.....Zhang Kaixiang [1728 7030 5046], Zhuang Dadong [5445 1129 2767] and Zhang Li [1728 4539], et al., all of the Nanjing Institute of Geography, Chinese Academy of Sciences (29)

An Investigation of the Distribution of Tuna Fish Larvae in the Central Region of Nanhai.....Chen Zhenran [7115 4176 3544] and Wei Shuzhen [7614 3219 3791], both of the Nanhai Institute of Oceanology, Chinese Academy of Sciences (41)

Optimum Level of Protein in Diet for Black Carp Fingerlings .....Yang Guohua [2799 0948 5478], Li Jun [2621 6511], Guo Luji [6753 1462 7535] and Gu Daoliang [7357 6670 5328], all of the Shanghai Fisheries Research Institute (49)

The Relation of the Temperature-Salinity to the Hatching and Nauplius Development of Penaeus penicillatus Alcock .....Shi Liuzhang [2457 3177 4545], Zhujiang Fisheries Research Institute (57)

A Study of the Method of Prediction for Autumnal Prawn Catches in Bohai.....Liu Chuanzhen [0491 0278 2823], Yan Junji [0917 7165 4614] and Cui Weixi [1508 4850 0823], all of the Liaoning Marine Fisheries Research Institute (65)

Experiments on the Examination of Myxococcus piscicola by the Enzyme-Immunoassay Method.....Chen Yueying [7115 2588 5391], Huang Weihao [7806 1919 3493] and Dong Jihai [5516 3444 3189], all of the Zhejiang Freshwater Fisheries Research Institute (75)

Recovery of Potassium Chloride from Sargassum ash after the Iodine Was Extracted.....Wang Minghe [3769 6900 0735], Zhanjiang Fisheries College (81)

Research Note

On the Use of Integral Method to Calculate Shapes of the Trawl-Net Mouth.....Li Zhongnian (89)

9717
CSO: 4007/481

TABLE OF CONTENTS OF 'LINYE KEJI TONGXUN' NO 4, 1981

Beijing LINYE KEJI TONGXUN [FOREST SCIENCE AND TECHNOLOGY] in Chinese No 4, Apr 81 on back cover

[Text] The Ministry of Forestry Grants Awards for Forest Scientific and Technological Findings in 1978 and 1979..... (1)

Experimental Selecting and Breeding of Pest-resistant Plants of Pinus massoniana.....Liu Zhiwen [0491 1807 2429], et al., all of the Yulin Regional Institute of Forestry Sciences, Guangxi (2)

A Preliminary Report on Bud Grafting with Halves of Cleft Branches of Larch..... (4)

A Summary of the Chemical Weeding Trial in the Nursery Beds of Cunninghamia lanceolata.....Hong Changrui [3163 2490 3843], Zhejiang Institute of Forestry Sciences (5)

Technical Practice to Increase the Yields of Zizyphus jujuba .....Tian Shuhua [3944 2885 5478], Yang Fengnian [2799 0023 1628] and Guo Chunyang [6753 2504 7122], all of the Hebei Fruit Tree Research Institute (7)

Study on the Karyotype and Giemsa C Band Type of Common Camellia oleosa and Castanea mollissima.....Li Maiqiu [7812 7796 4428], Genetics and Breeding Teaching and Research Group, South China Forestry College (9)

Studies on the Aerial Seeding of Pinus sinensis in the Mountainous Areas of Hebei Province..... (12)

Calculation and Determination of the Optimum Seeding Rate in Aerial Seeding of Pinus sinensis.....Wu Qinxiao [0702 2953 1321] and Liu Xiangdong [0491 0686 2639], both of the Northwest Water and Soil Conservation Research Institute, Chinese Academy of Sciences (16)

A Further Study of the Characteristics of Aspen Stand and Its Management in the Secondary Forest Areas of Heilongjiang Province.....Pu Genwu [2883 2704 0124], Pu Xiangshan [2883 0078 1472] and Li Xiuqing [2621 4423 3237], et al., all of the Heilongjiang Forestry Survey and Design Bureau (18)

The Habits of Eurypoma plonikovi and Its Control.....Yuan Decan [5913 1795 3605] and Guan Yuxi [4619 3768 0823], both of the Henan Department of Forestry; et al. (21)

A Brief Report of a Study of a New Disease of the Poplar--A Canker Caused by Dothichiza populea.....Zhong Zhaokang [6945 0340 1660], Forestry and Soils Research Institute, Chinese Academy of Sciences (23)

A Preliminary Study of the Predatory Natural Enemy, Arma chinensis.....Xu Chonghua [1776 1504 5478], Yao Defu [1202 1795 1381], Li Yingmei [2621 5391 2734] and Yan Jingjun [0917 7234 0689], all of the Forestry Institute, Chinese Forestry Sciences Research Institute (24)

A General Report on the 16th International Poplar Conference and Some Personal Opinions on It.....Chen Binghao [7115 3521 3185], Forestry Institute, Chinese Forestry Sciences Research Institute (28)

Poplar Diseases in France and Italy.....Yuan Siling [5913 0843 0109], Forestry Institute, Chinese Forestry Sciences Research Institute (30)

9717
CSO: 4007/483

TABLE OF CONTENTS OF 'SENGONG KEJI TONGXUN' NO 4, 1981

Beijing SENGONG KEJI TONGXUN [FOREST INDUSTRY SCIENCE AND TECHNOLOGY] in Chinese
No 4, 15 Apr 81 inside back cover

[Text] The Ministry of Forestry Grants Awards for Forestry Scientific and Technical Findings in 1978 and 1979..... (1)

Calculating Tension of Mainline about Turn Cable Way..... Gao Yangshan [7559 2254 0810], Fujian Forestry Sciences Research Institute (3)

SL-3B Remote-controlled Machine with Radio for Forestry (Part Eight).....Su Pingzhang (5)

Test of Fuel Consumption within Equal Distance with Different Venturies.....Yu Lei (7)

Reforming the Management Setup and Developing Water Transportation of Wood.....Ren Hongsheng [0117 7703 3932], Hunan Forestry Survey and Design Institute (9)

Simple Calculation of Stone Arch Bridge.....Chen Luze (10)

Some Points in Connection with the Working Precision of the Automatic, Set Works of the Band Saw with Carriage..... Song Guozhi [1345 0948 1807], Heilongjiang Lumber Industry Research Institute (11)

The Utilization Coefficient and Electricity Consumption during Idle and Loaded Running of the Band-saw Machine .....Wang Wenhua [3769 2429 5478], Nanjing Forestry Product Industry College (13)

Improvement of Formed Milling Cutter for Tongue and Groove Joint of Drawers..... (16)

Automatic Checking Apparatus for pH Value of Fiber Pulp ..... (17)

Some Measures for Increasing Truck Power..... (19)

Performance Measurement and Structure Analysis of McCulloch PM 850 Chain Saw.....Ma Longbin [7456 7893 3453], Northwestern Forestry College (20)

Sharpening of Saw Chain..... (21)

Big Truck for Wood Chip Transport..... (23)

The Design for Minimum Steel Reinforcement Rate of the Rectangle Beam with Double Muscle..... (25)

The First Production Line of Oriented Chipboard in Europe ..... (26)

Apparatus and Method for Brazing Tips on Circular Saw Teeth..... (29)

9717
CSO: 4007/488

PUBLICATIONS

TABLE OF CONTENTS OF 'NONGYE JINGJI WENTI' NO 5 , 1981

Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] No 5, 23 May 81 p V-2

[Text] Table of Contents

Fixing Output Quotas on a Household Basis--
A New Breakthrough in Management in Rural Collective Economy
Wang Yuzhao [3769 6735 2507]..... (3)

How To Tackle the New Problems Emerging With
the Fixing of Output Quotas on a Household Basis--
Department of Rural Work, Communist Party Committee of Gansu Province..... (9)

Constructing Farms and Eco-Equilibrium--
Chen Zhong [7115 6850]..... (16)

The Development, Utilization and Protection
of the Eco-System of China's Desert Wastes--
Chen Changdu [7115 2490 4648]..... (22)

A General Survey on the Reform of the
Farming System in China's Northern Areas..... (27)

Is It Possible To Maintain the Acreage Under
Double Cropping Rice?--An Investigation of the
Farming System in Taoyuan County, Hunan Province--
He Guiting [[0149 2710 1656], Xu Xin [6079 1630],
and Yang Tingxiu [2799 2185 4423]..... (31)

An Approach to the Question of Reforming the
Wage System in State Farms--
Sou Dechang [1672 1795 2490]..... (35)

Some Views on the Development of the
Grasslands in the Northwest--
Xu Peng [6079 7720]..... (40)

Speed the Development of Livestock Breeding
Through Readjustment of Herd Structures--
Zhang Xinqin [1728 2450 3830]..... (43)

Possible Ways of Developing Fresh Water Breeding--
Tian Xinqun [3944 0207 5028], He Hongquan
[0149 1347 2938], and Han Fagui [7281 0127 6311]..... (45)

Discussion on the System of Responsibility
Involving Payment on Contract Basis and in
Relation to Production as It Operates in Fishery--
Tang Hongqian [0781 7703 3383]..... (52)

Construction of Rural Towns Is Worth Paying
Great Attention--An Investigation of the
Situation of Towns in Rural Jiangsu Province--
Feng Hua [7458 5478]..... (52)

Zhejiang Province Sets Up Plant Protection
Company on Trial Basis--
Agricultural Department of Zhejiang Province..... (54)

CSO: 4007/485

BRIEFS

RICE GRANARIES--Taipei, 20 Jul (CNA)--The government is planning to invest NT dollar 756 million (U.S. dollars 21 million) for building granaries capable of storing 108,000 metric tons of rice in the next 4 years. A government survey indicated that the combined capacity of rice granaries owned both by the government and private investors totaled 1.32 million tons, showing a shortage of 108,000 tons. According to a preliminary plan, the 4-year construction program will be equally completed between 1983 and 1987 with an annual capacity of 27,000 tons. However, bumper crops in recent years have raised the rice stockpiling, the volume of which as of the end of June exceeded 800,000 metric tons. [Taipei CNA in English 0258 GMT 20 Jul 81 OW]

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END

JPRS 78762

17 August 1981

China Report

AGRICULTURE

No. 159

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JPRS 78762

17 August 1981

CHINA REPORT

AGRICULTURE

No. 159

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

Diversification in Farm Villages Bringing Increased Development
(NONGCUN GONGZUO TONGXIN, No 5, 1981)..... 1

Briefs
Fish Production Increase in Two Provinces 11

Beijing

Beijing Flood Control Projects Reviewed
(BEIJING RIBAO, 8 Jul 81)..... 12

Fujian

Briefs
Rice Harvesting 14
Soybean Production 14

Gansu

Briefs
Crop Output 15

Guangdong

Peasants To Receive Higher Prices for Grain Output in Excess of Quota
(NANFANG RIBAO, 15 Jul 81)..... 16

Further Increases in Hybrid Rice Growing Area
(NANFANG RIBAO, 13 Jul 81)..... 17

Sexual Propagation of Azolla To Be Extended Elsewhere From Guangdong
(GUANGZHOU RIBAO, 9 Jun 81)..... 19

Foshan Farm Output Figures Given
(NANFANG RIBAO, 13 Jul 81)..... 20

Briefs
Grain and Oil Availability 22
Increase in Spring Tea 22

Hebei

Briefs
Rains Alleviate Heat Wave 23

Hubei

Briefs
Farm Pests 24

Jiangsu

Water Provided for Irrigation Despite Drought
(XINHUA RIBAO, 9 Jun 81)..... 25

Xuzhou Prefecture
Yangzhou Prefecture

More Meat, Eggs Available in Markets This Spring
(XINHUA RIBAO, 4 Jun 81)..... 27

Formulated Livestock Feeds Promoted
(XINHUA RIBAO, 16 Jun 81)..... 29

Rural Economy Developing, Life of Peasants Improved
(XINHUA RIBAO, 27 Jun 81)..... 31

Briefs
Rapeseed Sales Problems 34
Cotton Plants Budding 34
Crop Cultivation 34

Jiangxi

Briefs
Rice Production 35

Shandong

Existence of 'Private Persons' Not a Return to Capitalism
(Yan Shi; DAZHONG RIBAO, 9 Jun 81)..... 36

Merits of Allowing Private Plots Extolled
(DAZHONG RIBAO, 9 Jun 81)..... 38

Taian Prefecture Increases Water Conservancy Projects To Fight Drought
(DAZHONG RIBAO, 24 Jun 81)..... 40

Systems of Responsibility for Production Used in Shandong Described
(DAZHONG RIBAO, 26 Jun 81)..... 42

Briefs
Summer Grain Procurement Overfulfillment 44
Peanut Sowing Completed 44

Shanxi

Briefs
Wenxi County Bumper Wheat Production 45
Quwo County Wheat Procurement 45
Technology Contracts Signed 45

Sichuan

Bumper Grain Output Achieved in Recent Years
(SICHUAN RIBAO, 13 Jul 81)..... 46

Zhejiang

Briefs
Diversified Economy 47

II. PUBLICATIONS

Table of Contents of 'KUNCHONG XUEBAO' No 2, 1981
(KUNCHONG XUEBAO, May 81)..... 48

Table of Contents of 'ZHONGGUO SHOUYI ZAZHI' No 5, 1981
(ZHONGGUO SHOUYI ZAZHI, 22 May 81)..... 51

ABSTRACTS

GENETICS

YICHUAN XUEBAO [ACTA GENETICA SINICA], No 2, Jun 81..... 53

I. GENERAL INFORMATION

DIVERSIFICATION IN FARM VILLAGES BRINGING INCREASED DEVELOPMENT

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 5 1981 pp 2-6

[Article by the State Agricultural Commission: "Report on the Active Development of a Diversified Rural Economy"]

[Text] Diversification in Farm Villages Have Realized Welcomed Development

Since the Party's Third Plenum of the 11th Party Congress, as the "leftist" mistakes on the agricultural front is being corrected and the various farm village economic policies are being implemented, a good situation in agricultural production which has rarely been seen since the founding of the nation has emerged.

Food grain production increased by a greater extent. Some major economic crops and forestry, livestock production, sideline production and fishery also showed welcomed development. Total income of commune and brigade enterprises was 56.5 billion yuan, an increase of 12 percent over the previous year. In general, the past trend of singular emphasis on food grain production and neglecting economic crops and forestry, livestock production, sideline production, fishery and other diversifications has begun to change.

For the past 2 years, the distribution of agricultural crops and the planting system have also been readjusted. The multiple planting areas of some inappropriate food grain crops have been reduced. Correspondingly, the sowing areas of some economic crops have increased. Some planting areas were returned for forestation, and some planting areas were returned for livestock production. Through readjustment costs have been reduced, waste has been reduced, and the income of the farmers has visibly increased. Increases in food grains have activated diversification, and diversification has promoted increased production of food grains. The achievements of readjustment have been visible. Although many communes and brigades suffered from natural disasters rarely seen during the past several decades, damage could not be seen in the disaster areas. The farmers are happy, the farm villages are prosperous, and a happy scene exists.

Development of Diversification Is an Objective Need

Surveys and studies of the past 2 years have shown that the present productive structure in our nation's agriculture and the ratio among farming, forestry and livestock production are still not rational. A long process of readjustment is still required to build a foundation of a beneficial cycle.

The people's need for agricultural products is varied. A good development of diversification will directly affect the income of the farm village collective and the individual. The development of light industry and will also directly affect the needs of the broad masses of people in cities and villages. In the past, because of singular pursuit and neglect of diversification, the level of consumption of the people up to now is still very low. In 1980, each person had an average of 646 jin of food grains, 5.4 jin of cotton, 5.5 jin of edible oil, 5.7 jin of edible sugar, 8.4 jin of aquatic products, 23 jin of pork, beef and mutton, 2.2 jin of milk, and only 0.29 jin of tea after deducting exports. For the urban population, per capita average of chicken eggs was only 7 jin. The level is already low enough, and if the past method continues, this conflict will become more and more outstanding.

Secondly, our nation has a large population, less cultivated land, frequent natural disasters, backward technology, but our nation's land is expansive, natural resources and labor resources are rich, there are many avenues for production. This condition has determined that our nation must actively develop diversification while assuring increases in food grain production so that the advantages can be developed and shortcomings can be avoided to develop the two advantages of expansive land and large population and overcome the disadvantage of less cultivated land. If work is done only on cultivated land which constitutes only one-tenth of the nation's territory but not in the area of mountain regions and grasslands, rivers, lakes and beaches which constitute nine-tenths of the nation's soil, the farmers will not become rich easily. Practice proves that the only way for farmers to change from poverty to prosperity is by developing diversification.

Agricultural production is seasonal, practicing diversification can yield a mutual balance of the needs for production and labor forces in each period of the entire year so that the departments with different working seasons can be managed in a coordinated way to benefit increases in the rate of utilization and the rate of production of the labor forces. This can also lead to suiting measures to the available talent, each person can fully exercise his talent so that each type of labor force can develop its talent and fully serve its function to solve the problem of employment in farm villages. It can utilize the shortcomings to advance the advantages, "utilize sideline production to stimulate agriculture," hasten turnover of capital, and increase the income of the collective and the individual commune members. At the same time, it is beneficial to creating a good ecological environment in agriculture, and can increase export commodities and develop the ability to earn foreign exchange.

For many years in the past, diversification was actually limited. During one period, diversification was even criticized as capitalism, creating great dangers.

Although the situation has changed during the past 2 years, some unilateral viewpoints that have been formed over a long period still exist seriously in the minds of some comrades. As a habit they put these viewpoints into practice, lack understanding of the necessity of readjusting the productive structure, as soon as they see a slight problem in a certain point, do not analyze it but negate it, and they return to their old ways. Therefore, continuing to correct the leftist mistakes in farm villages at present and further correcting the ideological line are still the prerequisites of implementing the principle of suiting measures to local circumstances and developing diversification.

There Are Broad Openings for Developing Diversification in Farm Villages

The area of mountain regions and hilly regions in our nation is expansive, constituting over 60 percent of the nation's area of land. Resources are rich and treasures can be found everywhere. In the past, Youyu County in Shanxi Province was called "infertile land." Since 1958, trees have been planted and the land has been forested year after year. The forested area developed from the original 8,000 mu to 760,000 mu, nearly 10 mu per person. The percentage of coverage by forests increased from 0.3 to 27.6 percent, becoming an "oasis on the frontier." In 1979, the average yield of food grains per farmer was 780 jin, each family raised an average of seven head of hogs and sheep, and 1.2 head of large livestock. In the mountain regions, woody oil bearing plants, tea, fruits and other economic woody plants can also be developed massively. Now, our nation's production of tong oil seed, lacquer, tussah silkworm cocoon, walnut, and Chinese chestnut has not yet reached the highest yield in history and the potential is great.

Our nation's plant resources are rich: there are over 30,000 species throughout the nation. Fully utilizing these resources can provide various raw materials for industry and can also produce various foods and daily commodities. We must develop the production of aromatics, food spices and drinks in a big way. We suggest that the related departments of light industry and commerce draw up a development plan to promote the development and utilization of resources.

At present, economic development of the mountain regions is slow mainly because the problems of food and clothing for the masses have not been solved well. As long as the nation appropriately cares for them with food and capital to enable the masses to overcome their difficulties, and at the same time, pays attention to the development of transportation in the mountain regions and manages the circulation link between procurement and marketing well, after several years, results will be realized. Now, Zhejiang, Shanxi, Yunnan, Guangxi and Sichuan provinces and regions have all directed their attention to such work and good results have been obtained.

Livestock production and grassland for grazing regions of course have great potential which can be exploited. Construction of grasslands should be strengthen strengthened and rational raising of livestock should be implemented according to already established guidelines to increase the rate of production. At the same time, we should see that over 90 percent of the nation's meats are supplied by the farming regions, not only should hogs and domesticated fowl be basically raised in farming regions, but herbivorous livestock should also be mostly

raised in farming regions. There is 1 billion mu of grass mountains and grass slopes in the farming regions, 200 million mu of coastal beaches, and 1.5 billion mu of agricultural crops that produce stems and husks and bran. The natural conditions are good, labor forces are plentiful, and farming and livestock production can mutually promote each other. The masses urgently demand that planting and livestock production be carried out together. In particular, it is even easier to motivate the farming families to privately raise such livestock. As long as the policy suits the need, little investment is needed, and such efforts can be rapidly developed. The four levels of the county, commune, brigade and production team of Qiongzhong County on Hainan Island operate a total of 746 cattle farms, with the addition of privately raised cattle, the total number of domesticated cattle throughout the county in 1979 reached 37,000 head, an average of 2.5 head per family. If the grass mountains and grass slopes can be fully utilized to raise superior breeds of livestock, cattle raising will be able to increase in multiples. Which part of the southern mountain regions is suitable for forestation and which is suitable for livestock production must be determined by investigation. Most of the grass mountains and grass slopes, according to soil conditions, are unsuitable for grazing and livestock production, and cutting grass and raising livestock in fenced areas should be advocated to avoid destruction of the vegetation of the grass mountains and grass slopes and loss of water and soil. The grassy mountains and slopes in the south are of acidic soil, the quality of grass is poor, and some grasses cannot be fed to livestock. This needs to be studied by specialists organized by agricultural science and research departments to find a way to gradually reform these grassy mountains and slopes.

Aquatic production is still lingering at a very low level. Fishing in the coastal seas has already been excessive. We should insist on implementing regulations to limit excessive fishing to facilitate propagation of such resources. Aquatic production during the 1980's will mainly depend upon the development of raising aquatic products. This must be firmly established. At present, the water surface area of fresh water culture constitutes only 55 percent of the area of water surface which can be utilized. The area of sea water culture constitutes only 23.6 percent of the area available for culture. The water surface is not only utilized to a small extent, but the yield is also very low. Pisciculture in ponds in Guangdong Province produced an average per mu yield of 346 jin in 1979. Some high yielding communes and brigades realized a per mu yield surpassing 1,000 jin, some even reached 3,000 jin, while the national average was only 96 jin. We should mobilize all active factors to strive to basically utilize all areas of fresh water usable for pisciculture, to utilize half of the area of sea water usable for aquatic culture and to strive to increase unit yield. In this way, we can suppress the intensity of catching in coastal waters and protect resources and at the same time sustain our nation's greater increase in the yield of aquatic products. Each level of the aquatic production departments should grasp in a big way the propagation of fry and organize the supply of fry well.

Correctly Handle the Relationship Between Food Grain Production and Diversification

Since Liberation, the yield of food grains increased twofold. The problem of feeding a population of 1 billion has been solved. Large scale capital construction of farmland has been carried out, the achievements have been very great and they should be affirmed. The shortcoming is that insufficient attention has

been given to economic gain. In the past, some localities went contrary to planting according to the local circumstances, unilaterally emphasized taking food grains as the key link, expanded the sowing area of food grain crops in areas unsuitable for planting food grains, and even reclaimed with disregard, destroyed forests and reclaimed wasteland, blindly encircled land of lakes and seas to create fields, and built man-made plains. The investment was large, a lot of effort was exerted, the gains were few, and the gain could not make up for the losses. Some other places blindly expanded the multiple planting index, expanded the planting area of high yielding crops, squeezed out bean crops and miscellaneous grains, forming an irrational planting system and causing decreased soil fertility. Because the planting was irrational, a lot of labor, capital and energy resources were wasted in drought resistance, draining water-logged conditions and in irrigation. This way of doing things without regard to cost and economic results has caused the masses to suffer. Experience shows that unilaterally grasping food grains is contrary to the wishes of the masses.

At present, our nation's food grain production has still not overcome its difficulties. The production of food grains cannot increase, diversification cannot be developed, and the entire situation of the national economy is affected and even political stability is affected. Therefore, food grain production cannot be carelessly managed, it must be grasped very tightly. That which is to be corrected is not emphasizing food grain production, but the unilateral policy of a singular grasp of food grains and the neglect of diversification. Developing food grains by suiting measures to local circumstances should not be opposed but should be actively encouraged.

The key problem is to rationally arrange the area of planting so that food grain crops and economic crops can maintain a rational proportional relationship. During the recent period, our nation's food structure cannot undergo a large change. Because of the limitations of the present productive conditions, we cannot depend only upon digging the potential of unit yield; we must also maintain a definite planting area. Nationally to place food grain production in an important position, the sowing area of food grains must be kept basically stable but we must not negate the necessity of continuing readjustment. Some comrades worry that readjusting agricultural distribution will reduce the area for food grains and will affect increased production of food grains. Viewing the results of readjustment of the past 2 years, we see that this kind of worry at least at present is unnecessary. This is because:

1. Readjustment during the recent 2 years has actually reduced a part of the area of food grains but the reduction has all been in the area of multiple planting due to blind expansion of the past. This part of the multiple planting area does not have suitable conditions and the yield did not increase but decreased and at some places, even though yield increased, because the cost of production was too high, income decreased, and the so-called high yielding poor production teams emerged. The masses expressed many opinions, and such efforts could not continue. In expanding the area of economic crops, oil bearing crops were expanded more and a fairly large part utilized saline and alkaline land to plant more sunflower. In the north, the area of beets was expanded and this mostly utilized this type of land. This is beneficial, not harmful. Although some economic crops, such as the planting area of cotton, increased in

area, only the area that was squeezed out was restored, and up to now the highest level of planting in history has not been restored.

2. The yields of agricultural crops do not necessarily increase as the sowing area increases or as the sowing area decreases. The key is to see if measures are suited to local circumstances, whether planting is rational and refined. The experience of many localities during these 2 years has proven that as long as measures are truly suited to local circumstances, as long as the crops are arranged appropriately, as long as corresponding measures are implemented, even though the area is smaller, increased yields in food grain crops can still be realized, and diversification can also be stimulated. In 1980, Zuanhua County in Hebei Province utilized the achievements of zoning to readjust crop distribution and the planting system, reduced the area of two croppings a year and increased the area of triple croppings in 2 years, and actively developed forestry and livestock production. That year, food grains increased by 65.16 million jin, creating the highest level in history. Peanuts increased 55.3 percent, the number of sheep increased 6.6 percent, total income increased 5 percent, and distributed income of commune members increased 13.4 percent.

3. The ways to develop diversification are many; they are not equal to just the development of economic crops. Many such diversification efforts do not occupy land. Even many economic crops do not take up farmland at all and they do not affect food grain production. Diversification has in turn provided a very good ecological environment and conditions for food grain production, therefore it should be developed freely.

Readjustment of the structure of agricultural production and readjustment of the distribution of agricultural crops so that it will be rational are strategic tasks in agricultural production, and they must be insisted upon without wavering. But, the steps must be steady. Especially in the readjustment of the planting area, efforts should not be too hasty and too drastic. They should be carried out under the prerequisite of maintaining continued increases in the yield of food grains. Each locality, when considering the superiority of the locality, must also coordinate efforts with state plans. Each locality must not blindly expand economic crops and squeeze out or take up areas for food grain crops. It also must not return to the old way of grasping only increases in food grain production and squeezing out diversification. Whether food grain crops or economic crops, emphasis should be placed on efforts to increase unit yield, and one must not limit one's ideas to manipulating the area. The general requirement is not to let go of food grain production but to actively develop diversification so that all efforts will realize their goals and all efforts will be mutually complementary.

Several Problems That Must Be Further Solved Well in Developing Diversification

(I) Each level of the party committee and government and concerned departments must do the work well in surveying the resources of the local area, planning for production and zoning. It should fully develop the superiority of the local region and suit measures to local circumstances to draw up plans to develop diversification. In the use of capital and materials to support agriculture, support for diversification must be regarded as an important aspect, and concrete

guidance must be given to management and operation. Construction of small towns must be developed by combining with the development of diversification relying on the strength of the collective economy. This is significant not only to the needs of commodity exchange between cities and villages, but also to the propagation of advanced science and culture to the farm villages, changing the distribution of the entire economy of the nation, and gradually closing the differences between the towns and the villages.

(II) The policies must be relatively stable and must realize their promises in time. Since the Third Plenum, the series of policies established by the Party Central Committee and the State Council, such as the policies of rewards for various agricultural sideline products, the policies to encourage and support the masses to develop family sidelines, and the series of policies established last year to link cotton and food grain production and link sugar and food grain production have all served greatly to promote the development of diversification. They should be kept relatively stable. Some policies, such as policies involved with sidelines of commune families, private plots and private mountains and planting trees by individual commune members must be approved by the legislature and must not be changed for a long time so that the masses can plant and develop them without fear.

Diversification methods are broad, most can be managed separately. Each locality should insist that the communes and brigades manage diversification or insist on joint management by communes and brigades, but at the same time, each locality should actively reward and support commune members to develop family sidelines and the planting of private plots, and allow "private persons," i.e., each family can have a few members who dedicate themselves specifically to the management of the family sideline and private plots. Where conditions are good, some private plots can be appropriately expanded. The upper limit of private plots can reach 15 percent of the area of cultivated land. There are many advantages to appropriately expanding private plots. One is that it can fully utilize auxiliary labor forces. The second is that it can increase the varieties of agricultural sideline products and supplement market needs. The third is that it can develop and improve the farmer's technical skills. The fourth is that it can increase the income of farmers. The fifth is that it can benefit preparations against disasters and hunger.

The prices of certain agricultural products must be gradually readjusted appropriately. In 1979, after the procurement prices of 18 types of major agricultural products were increased, the varieties of products that were subjected to price increases, such as flue cured tobacco, tong oil seeds, relatively speaking, were not as beneficial than other types of crops, the enthusiasm of the farmers was affected, and the yields gradually dropped. It is suggested that when considering commodity prices, one must also study price increases or returning a part of the industrial and commercial profits so that the productive units will have a definite gain. This will promote the development of production.

During the recent 2 years, each locality has implemented the responsibility system to counting salary in joint production by contracting work to the units, families and individuals specializing in such production. This has brought visible

effects in developing diversification. Practice proves the form of production by specialized units and specialized families is a good way to increase the economic results and to develop specialized production under our nation's present level of production. To support specialized production, some localities have carried out some measures. The Xigu Ward in Lanzhou City in Gansu Province implemented several methods for specialized families to engage in livestock production. The bank provided loans to some specialized families to help solve the difficulty of insufficient capital. The food trains department organized the supply of feed or the masses themselves established a collective feed production and supply cooperative to give conveniences to the specialized families. The veterinarians of wards and communes were assigned to go deeply to the families to help prevent and control disease. The materials department provided timber and cement to the new specialized families to build pens and tents. Concerned departments actively organized and provided superior breeds of livestock and fowl, popularized the knowledge of scientific feeding and provided measures to prevent diseases. These experiences are worth summarizing, improving and are actively popularized.

(III) Developing diversification is like food grain production, it has to rely on science and technology. In planting crops and raising livestock, the first thing is to cultivate and popularize superior varieties. In recent years, our nation's work in cultivating and breeding superior breeds of livestock has already established a preliminary system. At present, strengthening the work of popularization is especially needed to expand the results. In planting, impure, mixed and degenerate seeds are relatively serious, diseases and insect pests have increased, greatly affecting the yield. Some original seed farms and superior seed propagation zones must be established according to plan. In regions of concentrated cotton production, some cotton ginning mills for superior varieties should be established to avoid mixing.

Secondly, the problems of feed and food for domesticated fowl and fish and shrimp must be solved well. In foreign nations, the study of combined feed already has a history of over half a century. For the past 30 years, because of the improvement in feed, the cycle for raising meat chicken has been shortened by half and the amount of feed has been reduced by half. In 20 years, the cycle for raising beef cattle has been shortened an average of 50 to 70 days, the efficiency of feeds has been increased by 20 percent. Work in this regard is very important to our nation. But work in this regard is very weak, in particular the amount of protein in feed is extremely deficient, the amino acid industry is basically a void. In the future, construction of the feed industry should be especially strengthened to fully utilize the various sideline products of agriculture and livestock production, increase the rate of utilization of feed so that our nation's limited feed can produce more products. In raising fish and shrimp, besides supplying necessary meal, many localities have utilized biological cycles, combined the raising of silkworms, hogs and fish and the results are good. This should be advocated.

The third is to do the work in animal and plant protection well. Now, diseases of livestock and fowl and plant diseases and insect pests affect production greatly. Forceful measures must be taken to control the ten types of serious

diseases of livestock and fowl as soon as possible, hog cholera, fowl plague, brucellosis, blood fluke, infectious anemia of horses, glanders, sheep pox, sheep mange, contagious pleuropneumonia of cattle and foot and mouth disease; to control the spread and development of dendrolimus spectabilis, pine coccus, oil tea looper, early needle cast disease of larch which are diseases and insect pests that seriously harm forests; to basically control armyworms, aphids, cotton boll worms which are crop insect pests.

(IV) The problems of processing, storage and shipping must be solved well. Diversification is mainly production of commercial products. The greatest worry of the farmers is that their products cannot be sold. For over 30 years, in developing diversification in our nation, some products have been developed like fads, "when there is less, one looks everywhere, when there is slightly more, nobody wants any more." This lesson is profound. There are many reasons that created this problem. One important factor is that processing, storage and shipping of products at present do not suit the demands, the funds for procurement are too scarce, and this problem has to be conscientiously studied and solved, some of the procurement work must be improved.

Our nation's processing industry of agricultural sideline products is very backward. There are many blanks. Development of the food processing industy can improve the rate of utilization and the prices of agricultural sideline products and can also greatly reduce the difficulties in storage and shipping. There are many products that have to be processed before they can become commercial products, such as actinidia chinensis. Our nation has plenty of wild resources, but because problems of processing have not been solved, the resources cannot be utilized very well.

To solve the problem of coordination among production supply and marketing, foreign and domestic market forecasts must also be developed and the arrangement of production must be done well according to the actual conditions of each locality. To prevent surplus or shortage of certain products, we must assure that the state procurement tasks are fulfilled, and we must not short change the farmers, we need to popularize the contract system in a big way so that the state and the people both know what we have. At the same time, prices of some agricultural sideline products can be allowed to float somewhat to regulate production. We must protect competition and develop the enthusiasm of all aspects to enliven the economy.

Developing diversification involves many aspects. It is related to the production and the supply and marketing departments, it is also related to the departments of planning, financial administration, taxation, banks, prices, commodities, industries, transportation, scientific research, industrial and business administration and management. Common efforts are needed to strengthen concrete guidance and support, and some problems in development must be studied and solved in time so that faster development can be realized.

In general, we must firmly believe that our nation has 800 million hard working and intelligent farmers, rich natural resources, a glorious socialist system, and under the correct leadership of the Party Central Committee and the State

Council, by following the lines and the policies of the Party's Third Plenum, after 20 to 30 years of efforts, we will surely cause a relatively big change in the productive structure of mainly producing singular food grain crops and the food structure of mainly food grains formed over a long period in our nation, and we will build a new farm village that has an overall development in agriculture, forestry, livestock production, sideline production and fishery production, that has a comprehensive management system for agriculture, industry and commerce, that has a beautiful environment, that has a rich life and a developed culture. This goal will surely be achieved.

(Taken from the "Report Concerning the Active Development of Diversified Farm Villages" of the State Agricultural Commission transmitted by the Chinese Communist Party Central Committee on March 30, 1981, the editor of this magazine has deleted some parts of the report)

9296
CSO: 4007/478

BRIEFS

FISH PRODUCTION INCREASE IN TWO PROVINCES--The implementation of fish production responsibility systems in rural areas of Hubei and Hunan has greatly increased the production of freshwater fish in these two provinces. In 1980, Hubei and Hunan produced 23.3 and 34 percent more fish respectively than in 1978. Further increase has also been reported this year. [Beijing RENMIN RIBAO in Chinese 21 Jul 81 p 2]

CSO: 4007/540

BEIJING FLOOD CONTROL PROJECTS REVIEWED

Beijing BEIJING RIBAO in Chinese 8 Jul 81 p 1

[Article: "Post Liberation Building of Reservoirs and Dredging of Rivers Reduces Calamities. In Former Days, Beijing Averaged a Flood Disaster Once Every 1.5 Years"]

[Text] Achievements in the building of flood control projects for Beijing during the past 30 years have been remarkable, and ability to prevent floods has vastly increased.

Before the founding of New China, during every flood season the Beijing area had serious flood disasters. Statistics for the most recent 600 years show the occurrence of 387 fairly serious flood disasters, or an average of one every 1.5 years. Several times in history, the Yongding River breached its banks and changed course, and came to be called the Wuding River [Wuding being uncertain in contrast to Yongding meaning forevery certain]. In 1801 and again in 1890, it flooded Beijing and several hundred li became a fast expanse of water. The Chaobai River was similarly unruly. It flooded in 1937, completely washing away a reinforced concrete bridge across it.

Following Liberation, the party and government began in 1951 the planned construction of flood control projects, and over a period of 30 years, more than 875 million yuan has been invested in related flood control capital construction. Now the city has built 17 large and medium size reservoirs including Guenting, Miyun, Huairou, and Shisanling with a flood control capacity of more than 3.1 billion cubic meters. They can contain flood waters that would cover an area of 16 million square miles to a depth of 2 meters. Additionally 67 small reservoirs have been built. These are located in every quarter. The major streams, Yongding River, Chaobai River, and Beiyun River have also been brought under control. A total of 980 kilometers of flood control and drainage rivers have been dredged, and dikes rebuilt and strengthened. This is equal to four times the distance back and forth between Beijing and Tianjin. As a result of the building of the Yongding Reservoir and the strengthening and increasing of the height of river dikes, not only in the Yongding River Gorges, but in other sections of the Yongding River as well, the threat to the people's lives and property from flood waters has been brought under control. Following construction of the Miyun Reservoir, the Chaobai River has also become submissive. As a result of the building of this reservoir, grain damage equivalent to more than 800 million yuan in value has been averted. As a result of the dredging

and strengthening of the dikes of the Beiyun River, 88 percent of a readily flooded area of 2.5 million mu has been improved.

The city cannot lower its guard now, however; it must continue to build flood control and drainage projects to eliminate entirely the threat of floods.

9432
CSO: 4007/523

BRIEFS

RICE HARVESTING--As of mid-July, Fujian's Minqing County had harvested 16,000 mu of early rice, twice the figure for the same period last year. [OW041235 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 25 Jul 81]

SOYBEAN PRODUCTION--By growing soybeans in single-crop ricefields in spring instead of autumn, Datian County, Fujian, has reaped more than 1.4 million jin of soybeans this year, 8 times more than last year. [OW041235 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 26 Jul 81]

CSO: 4007/541

BRIEFS

CROP OUTPUT--Lanzhou, 20 Jul (XINHUA)--Anxi County in Gansu has rapidly developed agricultural production since liberation. In the past 31 years, the country's total grain output has increased from 13 million jin to 83 million jin and cotton from 51,000 jin to 320,000 jin. Last year, the country's per capita grain output and procurement were 1,888 and 780 jin respectively, topping other counties in the province. In the past 3 decades, the county has afforested 21,700 mu land and 3,600 shelterbelts of various lengths, totaling 1,800 km and planted 10.41 million trees. [OW041043 Beijing XINHUA Domestic Service in Chinese 0201 GMT 20 Jul 81]

CSO: 4007/541

PEASANTS TO RECEIVE HIGHER PRICES FOR GRAIN OUTPUT IN EXCESS OF QUOTA

Guangzhou NANFANG RIBAO in Chinese 15 Jul 81 p 1

[Text] Beginning this year, Guangdong Province has instituted fixed work quotas in the purchase, sale, and transportation of grain and oil, guaranteeing no change for a period of 3 years. This is a reform in the province's grain and oil management system. Implementation of a 3 year guaranteed policy on requisition purchases of grain and oil is helpful in stabilizing the peasants' burdens and in having production teams, acting under the guidance of the state plan, adapt general methods to local situations for a readjustment of agricultural production patterns to promote all around growth in grain and economic crops.

In order to lighten the peasants' burdens, increase the peasants' benefits, and arouse their production initiative, in this implementation, overall requisition purchase quotas and requisition purchase base figures have been suitably readjusted. In minority nationalities areas, old Soviet areas, part fishing, part salt making, and part farming areas, and other areas having low consumption grain production teams where the annual amount of grain for consumption is less than 400 jin of unprocessed food grain, as well as in key forest area communes where annual consumption grain amounts to less than 420 jin but where the production teams are responsible for requisition purchase quotas, suitable reductions have been made in requisition purchase quotas for grain, bringing about a rise in the level of their consumption grain. In old commodity grain producing areas, emphasis has gone to solving the problem of high base figures for requisition purchases, the proportionaltely small amount paid for purchases in excess of quotas, and the smallness of economic benefits. At the same time, in order to give support to commodity grain production in grain growing areas, price subsidies have been instituted. In making these subsidies, the production teams are the basic units. For every 100 jin of paddy in excess of a 300 jin average per capita annual base figure for requisition purchase sales to the state, a subsidy of 3 yuan will be made. It has been calculated that once readjustment has been made in the proportional difference between price paid for requisition purchased grain and grain purchased in excess of quota, the province's peasants will realize an increase of more than 42 million yuan in income from the increase in price paid for grain sold to the state in excess of quotas. From the sale of edible oil in excess of requisition procurement quotas, they will realize an additional more than 10 million yuan plus award sales of 100,000 tons of chemical fertilizer.

9432
CSO: 4007/519

FURTHER INCREASES IN HYBRID RICE GROWING AREA

Guangzhou NANFANG RIBAO in Chinese 13 Jul 81 p 1

[Article: "Benefits From Growing of Hybrid Rice Very Great. Expansion of Growing Areas of This Variety As a Late Crop in Sanshui and Shixing Counties"]

[Article" "Sanshui County has conscientiously studied its own and other counties' experiences in the growing of hybrid rice for active and steady development of hybrid rice. This year the county plans to grow 30,000 mu of hybrid rice as a late crop.

This year the county test planted almost 200 mu of hybrid rice as an early crop in communes having different kinds of terraine for yields that were generally about 200 jin per mu higher than for other varieties. The County CCP Committee and the county government promptly convened on-site meetings for on the ground appraisal of this variety. Meanwhile, the county and some communes organized 400 grassroots level cadres to go to Enping County to inspect and study so that everybody would have a deeper understanding of the superior characteristics of hybrid rice, and would have increased confidence about and determination to promote the growing of hybrid rice.

In order to assure that planting of hybrid rice would be done well, this county purchased more than 63,000 jin of seeds from elsewhere, at the same time giving attention to training people in fertilization, pesticide, and cultivation techniques. They also invited 17 peasants with practical experience from Enping County, whom they assigned to each commune to guide the planting of hybrid rice.

Shixing County conscientiously summarized many years experience in production and has persevered in reliance on science to win high yields, this year putting into effect a plan for the growing of more than 95,000 mu of hybrid rice as the late crop throughout the county. This amounts to 64 percent of the planned late crop planting area.

In view of the location of Shixing County in the mountain area of northern Guangdong where the "cold dew wind" comes early on the late crop and where rice output is neither high nor cousistent, the county begin the introduction of hybrid rice in 1976, and got a taste of the benefits to be had from growing it. From 1977 onward, the county extended its cultivation generally, and by last year hybrid as a late crop was being grown on more than 41,000 mu for yields and averaging more than 700

jin per mu of dry paddy, between 130 and 150 jin per mu more than from other varieties. The County CCP Committee diligently summarized experiences with the late crop last year in mountainous Aizi and Siqian communes, where greatly increased yields were harvested from the planting of hybrid over wide areas. They helped cadres and masses get rid of their apprehensions and make up their minds to do a good job of planting hybrid rice. This year, the county grew more than 95,000 mu of hybrid rice as a late crop, double the amount grown during the same period last year. Now, all jurisdictions are devoting themselves to sowing and propagation of seedlings, making ready for early transplanting to win a bumper harvest from the late crop.

9432
CSO: 4007/519

SEXUAL PROPAGATION OF AZOLLA TO BE EXTENDED ELSEWHERE FROM GUANGDONG

Guangzhou GUANGZHOU RIBAO in Chinese 9 Jun 81 p 2

[Article: "Guangdong Province For the First Time Promotes Use of 'Ximanjianghong' Azolla Sexual Propagation Techniques"]

[Text] Guangdong has been successful in its first promotion for use over wide areas in production of "Ximanjianghong (American azolla) sexual propagation techniques." For this year's early crop, the province used Ximanjianghong spores in the sexual propagation of plants on more than 16,600 mu. Successful research in this technique opens a new avenue for Guangdong Province in solving the problems of a source of organic material for its rice fields.

Ximanjianghong is a superior azolla variety suited to propagation during winter and spring in Guangdong. In rice fields where Ximanjianghong is grown, paddy yields increase by from several score to more than 100 jin per mu. However, formerly asexual propagation was used with this variety of azolla. Since this azolla's tolerance of heat is poor, taking care of it under the high temperature conditions in summer in Guangdong required much labor and expenditure of large amounts of funds. Thus, to propagate Ximanjianghong over wide areas would entail use of sexual propagation techniques. Seven young researchers in the azolla section of the Soil Fertility Institute of the Provincial Academy of Agricultural Sciences worked more than 3 years on scientific experiments without any data domestic or foreign to consult, finally succeeding in the winter of 1979 in use of spores for the first time to breed sexual plants. This spring the technique was appraised and approved.

Practice has shown the whole sexual propagation technique to be simple and easily done as well as at a great saving in expenditures over asexual propagation. Each commune needs only a few millimeters of azolla growing land from which it can gather spores in order to solve the problem of Ximanjianghong azolla to be tended by the entire commune.

Most recently the Provincial Science Commission decided to issue an award second class for this scientific and technical accomplishment. The Ministry of Agriculture, the Chinese Academy of Agricultural Sciences, and the Provincial Agricultural Commission have made this achievement one of their key projects for which they have alloted special funds for the purpose of promoting its widespread application.

9432
CSO: 4700/514

FOSHAN FARM OUTPUT FIGURES GIVEN

Guangzhou NANFANG RIBAO in Chinese 13 Jul 81 p 1

[Article: "Foshan Prefecture Has Fulfilled or Overfulfilled State Quotas for Grain, Sugar, Fish, Silk, and Hogs Year After Year; Implements Policies of Third Plenary Session and Liberalizes Development of Commodity Economy"]

[Text] Ever since the Third Plenary Session, Foshan Prefecture, which has always had a relatively well-developed commodity economy, proceeded from realities, implemented the party's economic policies, liberalized development of commodity production, further increased the agricultural byproducts commodity rate, made the peasants prosper with all possible speed, and made a greater contribution to the country. For many consecutive years, the prefecture has fulfilled or overfulfilled the procurement, assignment upward, and export quotas handed down by the state for major agricultural byproducts such as grain, sugar, pondfish, cocoon silk, live hogs, and vegetables. Rural village commercial buying and selling have both thrived, and city and countryside markets present a flourishing picture.

In recent years, Foshan Prefecture has given attention to rational readjustments in the structure of its agriculture. Their principle has been to strive to increase per unit yields of grain from existing cultivated land, simultaneously tapping the land's unused potential to make full use of barren mountains, unused beaches, and water surfaces for the development of diversification centering on farming and the raising of livestock. Despite a 260,000 mu reduction during 1979 and 1980 in the area sown to rice in the prefecture (the equivalent of 130,000 mu of cultivated land annually, or 2.6 percent of the ricefield area), both per unit yields and total output rose. Last year total paddy output increased by 640 million jin over the previous year, an increase of 1.16 billion jin over 1978. Commodity grain provided the state by the prefecture was 1.46 billion jin in 1978 (of which 4.7 million was purchased at a negotiated price), rising to 1.8 billion jin in 1979 (of which 122.44 million jin was purchased at a negotiated price). Last year the amount increased to 2.42 billion jin (of which 593.7 million jin was purchased at a negotiated price). This year, this prefecture further readjusted the structure of its agriculture, principally by converting to the growing of sugarcane some low-lying sandy fields suited to the growing of cane. The prefecture's cane growing area was enlarged by more than 230,000 mu over last year, and the cane is now growing well.

In the process of developing production of commodities, in addition to vigorously supporting commune and brigade operation of the collective economy, Foshan Prefecture

also encouraged the peasants to develop sideline industries, and to do a good job with their private plots and privately tended mountains. The prefecture rehabilitated those peasant households that had suffered criticism for their past development of household sideline industries, and publicized some "10,000 yuan households" who had become prosperous through hard work. In the realm of commodity flow, sensible readjustments were made in monopoly purchases and requisition purchases, and purchases and sales at negotiated prices were enlarged. In addition, the requisition purchase prices paid for some agricultural byproducts were also raised in accordance with national policy regulations, or else price subsidies were given, or the scope of award sales of items enlarged. Following fulfillment of state quotas, producers were free to dispose of their agricultural byproducts as they pleased. Following institution of the policy of "allowing five hogs to be kept for every five purchased in the requisition purchase of pork," by way of maintaining the enthusiasm of peasants for raising hogs, state food departments adopted a policy of stable prices for pork sold at negotiated prices so that those who raised hogs could plan on a profit, thereby assuring that the prefecture would overfulfill fattened hog procurement, assignment upward, and export quotas year after year, and assure supply of fixed and special needs of residents of cities and towns.

The finance and trade departments of the prefecture adopted the integrated operating methods of rural communes and brigades, vigorously developing commodity production bases. Integratedly operated hog farms, and chicken, duck, and goose farms in the prefecture totaled 170. There was also one integratedly operated cow, sheep, rabbit, pigeon, and fruit base. Procurement contracts were used to help communes and brigades operate more than 4,300 hog farms and chicken farms, and more than 7,500 fruit farms. Last year more than 7.07 million chickens, ducks and geese, and more than 136,000 dan of citrus fruit were purchased in the prefecture, for increases of 61.5 and 78.3 percent respectively as compared with 1978. Though a freeze early in the year hurt pondfish output, the quantity marketed was still 2.7 percent higher than for the previous year. Between January and May this year, total value of agricultural byproduct procurement done by commercial and supply and marketing units amounted to more than 263 million yuan, a 2.4 percent increase over the same period last year.

9432
CSO: 4007/519

BRIEFS

GRAIN AND OIL AVAILABILITY--A new picture in grain and oil sales has appeared in the farflung rural markets of Guangdong Province. Quantities of oil and grain going to market have increased; prices have remained steady; and in quite a few places, rural fair sales prices have gone down. A great drop has also occurred in resale of grain to rutal villages by the state. In former years, April and May were the months of shortage when the old crop had all been consumed and the new crop still stood in the fields, and when the amount of grain sold greatly increased, prices in rural fairs rising. This year, however, no shortage has occurred during the shortage months. Statistics from 42 key rural fair markets throughout the province show that during April and May last year, rice sold for an average 0.40 yuan per jin, while this year it is 0.36 yuan, a decline from last year. A gradual shortening is occurring in the gap between the negotiated price and the list price of edible oil. The reason for the increase in the quantity of grain and oil going to rural markets in Guangdong Province and the drop in prices has been that ever since the Third Plenary Session, the party's rural economic policies have been implemented, communes and brigades have proceeded from reality to make rational readjustment in production patterns, and have generally promoted systems of responsibility for production, with the result that output of oil and grain has vastly increased. Whereas it had been forecast that during the shortage period this year the state would have to sell back 240 million jin of grain, the amount actually sold back between March and May was only 84 million jin, a reduction of more than half in the forecast sell back amount. [Text] [Guangzhou GUANGZHOU RIBAO in Chinese 10 Jun 81 p 2] 9432

INCREASE IN SPRING TEA--Guangdong Province joyously harvested a bumper crop of spring tea this year. Statistics as of the end of May show a dried tea output for the province of 79,000 dan, a 9.4 percent increase over last year's all-time high for the same period. Shantou Prefecture had a 10 percent increase, and farms under the jurisdiction of the Provincial Overseas Chinese Farm Administration and the Provincial Farms and Land Reclamation System, each showed increases of more than 20 percent. Since last winter, all the tea producing areas in the province have built up the soil and fertility of tea farms. Numerous tea farms have adopted measures for scientific tea farming and have carried out reforms in old tea plantations to lay down a fine foundation for increases in output of spring tea. Additionally, they have further implemented various forms of a system of responsibility for production, and this plus the institution of price subsidies for purchases of tea by provincial units has aroused the initiative of employees and commune members. [Text] [Gunagzhou NANFANG RIBAO in Chinese 11 July 81 p 1] 9432

CSO: 4007/519

BRIEFS

RAINS ALLEVIATE HEAT WAVE--Beijing, 4 Aug (XINHUA)--Hot, humid weather, the worst in 40 years, that has lain over Beijing for three weeks, was alleviated by heavy rains August 2 and 3, according to the local meteorological observatory. Between July 18 and August 2, daily temperatures in the Chinese capital averaged almost 30 degrees centigrade, with an average peak of 31.4 on the hottest days. Normally, the hottest daily temperatures for July are 26 degrees centigrade. The rains lowered temperatures by 10 degrees centigrade, said the observatory. Throughout the city, between 30 millimeters and 60 millimeters of rain fell, with the heaviest accumulation being 100 millimeters. The observatory, however, warned the city was still in the midst of the hot season and expected temperatures to rise again in the coming days. [Text] [OW041222 Beijing XINHUA in English 1207 GMT 4 Aug 81]

CSO: 4007/541

BRIEFS

FARM PESTS--(Jin Liang) of the agricultural bureau of Hubei Province, in a recorded talk broadcast by Wuhan radio station on 29 July, called on cadres and the masses in Hubei's rice producing areas to take prompt and effective action to guard against rice leafhoppers and other insects which threaten the growth of 6 million mu of rice, or 40 percent of the total acreage of middle-season rice in the province. He stressed the appropriate use of insecticides and called on the people to pay attention to safety in using insecticides. [OW031435 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 29 Jul 81]

CSO: 4007/541

WATER PROVIDED FOR IRRIGATION DESPITE DROUGHT

Xuzhou Prefecture

Nanjing XINHUA RIBAO in Chinese 9 Jun 81 p 1

[Article, "Xuzhou and Yangzhou Prefectures Resist Drought"]

[Text] Since the beginning of this year, spring has been followed by summer drought in Xuzhou Prefecture. Over 30,000 mechanized wells throughout the region have served their purpose for drought resistance. The wells have irrigated an area of over 3 million mu.

To fully develop the gain of the mechanized wells, each locality has grasped tightly the management work of mechanized wells, popularized the establishment of specialized management teams for mechanized wells, and implemented fixed quota management and the management responsibility system of "five established quotas and one reward." Now, the entire region already has over 13,000 permanent mechanized-well operators. In Xuzhou Prefecture, each locality has emphasized purifying old wells and tightly grasped the work of equipping and repairing wells. From January to May this year, the entire region outfitted 870 pieces of new motorized power equipment and 1,300 newly equipped water pumps, purified 2,500 old wells, and expanded the area of irrigation by more than 100,000 mu.

The broad masses and cadres of each county along the canal in Yangzhou Prefecture started out from the entire situation, joined the struggle to protect the dikes, and assured the safe pumping of water northward by the Jiangdu pumping station to support drought resistance in the Huaibei area.

To provide water sources for drought resistance in the Huaibei region, the Jiangdu pumping station started its pumps on 9 May to draw river water to send to the north. Because the amount of water being sent was large, the water level in the Yunyanhe, the Liyunhe, and the canal south of Gaoyou rose drastically. The water level surpassed the safety level and the level of the dikes, and in some sections dampness in basements and seepage occurred.

To assure the safe shipment of the water, the leadership of the Yangzhou administrative office personally went to key sections of the dike to direct the work. Jiangdu and Gaoyou counties assigned over 170 laborers to organize a

dike-protection patrol to stand guard day and night in order to monitor the situation. Jiangdu County also organized a standby rescue team of more than 1,400 persons to engage in dike protection and rescue work at any time.

Yangzhou Prefecture

Nanjing XINHUA RIBAO in Chinese 9 Jun 81 p 6

[Article: "Yangzhou Prefecture Seizes Tides and Draws Water To Resist Drought"]

[Text] During the past month and more, Yangzhou Prefecture has suffered from continuous drought and there has been little rain. The water level in lakes and rivers has dropped, and it has been difficult to use water for irrigation. The Yangzhou Prefecture flood prevention and drought resistance command headquarters organized the floodgates at Kouan, Madian, and Xiashi on the Yanjiang to seize the tides and draw water, and drew over 1.25 billion cubic meters of river water, basically satisfying the needs for irrigation water in the Tongnan, Yanjiang, and Lixiahe regions. The highest water level at Huangqiao can rise 17 centimeters a day, and it now has reached the optimum water level for irrigation.

9296
CSO: 4007/472

MORE MEAT, EGGS AVAILABLE IN MARKETS THIS SPRING

Nanjing XINHUA RIBAO in Chinese 4 Jun 81 p 2

[Article: "A Good Situation Not Encountered in Many Years Has Emerged in Our Province's Meat Market"]

[Text] Since the beginning of this year, the amount of foodstuffs such as meat, fowl, and eggs supplied to the market by the various levels of foodstuff companies in our province has continued to increase on last year's base. According to statistics for January to April, the supply of pork increased by more than 14 percent over the same period last year, eggs increased by more than 7 percent, domesticated fowl increased by more than 8 percent, and the supply of beef, reprocessed eggs, and frozen eggs all increased relatively greatly. With active trading in the collective market, the meat markets in all the towns and villages have revealed a good situation that has not been encountered for many years.

Our province is one of the key areas of live hog production in the nation. In 1980, the procurement of live hogs constituted one-seventh of the total amount for the entire nation. The procurement of fresh eggs and domesticated fowl also constituted one-tenth of the amount for the entire nation. This year, each level of government has further strengthened leadership in livestock production. At the beginning of the year, the provincial people's government, noting the downtrend in hog raising in some localities, held a livestock work conference in time and reiterated that the policy of developing hog raising will not change. The result was that each locality stabilized production. Beginning in April, the number of live hogs raised has again risen in seven regions of the province. The number of hogs in pens at the end of that month showed an increase of 740,000 head over the number at the end of March. Also, the number of sows, which at one time had dropped, has again risen. Spring incubation of domesticated fowl is also good. The number of young fowl supplied to the market in Xuzhou, Huaiying, and Yancheng has increased in multiples over last year. At the same time, commercial departments started from supporting production, improved procurement work, and insisted on the pricing policy and the policy of rewarding sales in the procurement of live hogs. Each level of the foodstuff companies popularized the contract procurement system and implemented the practice of "visiting the families to examine the hogs, giving certificates to those who qualified, and setting a time and place for procurement appointments"; the time for bringing the hogs to the market was scheduled to avoid crowding. Thus the difficulty that hog-raising

families had had in "selling their hogs" was solved. To encourage the masses to sell fresh eggs to the state, the foodstuff companies and supply and marketing cooperatives coordinated their efforts, established procurement points for fresh eggs at communes and brigades so that farmers need not leave the brigade to sell eggs, and gave material rewards according to regulations. From January to April of this year, over 56 million jin of fresh eggs were procured--more than the same period last year by over 8 million jin. The number of domesticated fowl and mutton lamb also increased by some 40 to 50 percent over the same period last year.

9296
CSO: 4007/472

FORMULATED LIVESTOCK FEEDS PROMOTED

Nanjing XINHUA RIBAO in Chinese 16 Jun 81 p 1

[Article: "Jiangsu Province Promotes Formulated and Mixed Feeds For Livestock and Poultry; Promotes Development of Feed Industry and Increases Economic Benefits from Livestock and Poultry Production"]

[Text] The production and promotion from key points to wide areas in the province during the past two years of formulated and mixed feeds for livestock and poultry has promoted development of the feed industry and increased the economic benefits of livestock and poultry production.

In the process of producing and promoting formulated and mixed feeds everywhere in the province, feeding experiments have been conscientiously conducted using all kinds of livestock and poultry. Test feeding have shown that since formulated and mixed feeds contain energy feeds such as corn and wheat, as well as powdered fish, powdered blood, cottonseed cake, and such protein feeds, as well as having trace elements added, nutrients are complete, their proportions are proper, and as a result their use in feeding livestock and poultry effects savings in the use of grain for feed, increases the return from the feed, shortens the feeding period, and promotes output and earnings from the livestock industry. Experiments conducted on the feeding of formulated feeds to 1,160 head of hogs by 97 commune member households and at 77 farms and brigades in Haian County showed a 26 percent increase in speed of growth, and an 18.9 percent decrease in the use of grain. Wuxi produced eating and laying chickens that were a different number of weeks old using pellet food and milk cow formulated feed to feed 4000 chickens. As a result, the total feeding period was shortened by 6 days; the survival rate was increased by 7.35 percent, and feed costs dropped by 0.127 guan. Formulated milk cow feed used in feeding of cows produced 29.65 percent more milk that feeding with a single kind of grain, and each head daily produced 4.23 kilograms more milk while consuming 0.55 kilograms less feed.

As a result of pilot demonstration projects, everywhere throughout the province there is both a selection and promotion of optimum feed foumulas, and also an intensification of the enthusiasm of cadres and the masses for use of formulated feeds. Planned adaptation of general methods to local situations in the development of the feed industry has begun to be included in plans at all levels of government. Planning grain, and commercial departments, and research institutions have taken action in

close coordination. All levels of government either have or are now in process of adopting a series of measures to support operation of the feed industry. Within the past several years, the feed industry has produced neither profits nor revenues, but has required a certain amount of subsidization. Gradually feed companies have been set up in cities and counties to act as special production and sales organizations for grain departments. Gradually the state's feed grains and the state's award sales of grains for livestock and poultry products have been assigned to the unified management processing, supply, and issuance as awards by these feed companies. In the setting up of programs, all jurisdictions have worked on the principles of advancing the state and the collective, of combining refurbishing and new construction, demonstration pilot projects, and acting in accordance with capabilities for gradual expansion. The province has refurbished, enlarged, or newly constructed more than 70 formulated and mixed feed plants or workshops, of which more than 50 have already gone into production. In addition, more than 900 communes and brigades are operating small formulated and mixed feed plants or processing sites, on site processing and on site supply sites, which have been greatly welcomed by the masses.

9432
CSO: 4007/514

RURAL ECONOMY DEVELOPING, LIFE OF PEASANTS IMPROVED

Nanjing XINHUA RIBAO in Chinese 27 Jun 81 p 1

[Article: "Heartening Situation of Rapid Devleopment of Rural Economy of Jiangsu Province; Party's Development of Agriculture and Improvements in the Life of the Peasants have Opened Broad Prospects"]

[Text] On the day when the people of the entire country celebrate the 60th birthday of the great Chinese Communist Party, the broad masses of rural cadres and commune members in Jiangsu Province heartily eulogize the beloved Party and extol the great accomplishments won by the party in leading the broad masses of the peasants in arduous struggle.

It was the party that saved from an abyss of suffering the broad masses of peasants, led everyone in the uprooting of the system of feudal exploitation, guided everybody in the gradual organization of the small farm economy on the basis of socialist public ownership, and conducted large scale capital construction of agricultural production of Jiangsu Province. Even though there have been detours and mistakes in the process of forward movement; nevertheless, extremely encouraging vast achievements have been made on the agricultural front throughout the province. The province's total output value for agriculture in 1980 showed an almost fivefold increase over 1949; total output value for grain increased more than fourfold, for cotton almost 15 fold, and for edible oil more than twofold. Great development also took place in forestry, animal husbandry, sideline industries, and fisheries. The province has established more than 75,500 commune and brigade enterprises, which employ more than 3.8 million people. Annual earnings of these enterprises amount to 10.94 billion yuan or 53.6 percent of total earnings for the three-tiered rural economy. Commune and brigade operated enterprises habe become a major integral part of the rural economy of Jiangsu Province. Today the sounds of farm machinery fill the fields, workshops, and even farm homes. Newly built small cities and towns proliferate, and the gap between city and countryside, industry and agriculture has begun to shorten. Along with development of the rural economy has been gradual increase in the standard of living of commune members. In 1980 average per capita distributions to commune members were more than three times greater than in 1957. Since the Third Plenary Session of the 11th Party Central Committee, in particular, the party's adoption of a series of programs and policies for rural villages, notably the establishment of various forms of a system of responsibility for production, respect for the self-determination of production teams, the

adaptation of general methods to local situations in the development of diversification, implementation of the principle of distri utions according to work, increases in the procurement prices paid for agricultural by-products, readjustments in requisition procurement quotas, etc. have improved and perfected socialist production relationships, and the enthusiasm of the broad masses of commune members has steadily increased, the superiority of the socialist system has been more fully demonstrated, and an unprecedented situation of prosperity has appeared or is in process of appearing in the rural villages of Jiangsu Province.

General Situation of Commune and Brigade Enterprises in Jiangsu Province, 1980

Total Number of Enterprises	75,500
Total Number of Employees	3,886,100
Total Income of Enterprises:	10.947 billion yuan
Proportion of total output value of agriculture	73 percent
Taxes paid	561 million yuan
Funds used to support agriculture	300 million yuan
Wages paid	1,657 billion yuan
Average per capita earnings, for the province's agricultural population	32.50 yuan

Total Output Value From Agriculture for the Province (100 Million Yuan)

1949:	30.19
1978:	124.36
1979:	139.64
1980:	146.93

Total Grain Production (100 Million Jin)

1949:	149.7
1978:	454.72
1979:	485.81
1980:	450.75

Total Cotton Production (10,000 Dan)

1949:	56.16
1978:	948.95
1979:	1063.39
1980:	832.81

Total [Edible] Oil Production (10,000 Dan)

1949:	310
1978:	668.53
1979:	758.37
1980:	655.18

Live Hogs On Hand at Year End (10,000 Head)

1949:	414.6
1978:	2161.05
1979:	2356.06
1980:	2088.75

Total Aquatic Products (10,000 Tons)

1949:	5.04
1978:	39.76
1979:	38.92
1980:	42.71

Average Per Capita Distributions to Commune Members (Yuan) (Not Including Income to Commune Members for Manure Provided)

1949:	39.2
1978:	85.4
1979:	99.2
1980:	94.6

9432
CSO: 4007/523

BRIEFS

RAPESEED SALES PROBLEMS--Comrade Editor: This year brought a bumper rapeseed harvest. At the Tanqiao Commune in Liyang County, rapeseed output was double the 1980 all-time record. Some commune member households had more than 1000 jin; some production teams had more than 10,000 jin, and the rapeseed requisition purchase and excess purchase quotas handed down by higher authority have been fulfilled and overfulfilled. However, the rapeseed harvested from commune members' private plots, and the rapeseed awarded for overfulfillment of production quotas have been very difficult to sell. Pricing, award sales of chemical fertilizer, and return of seed cake policies also do not give equal treatment without discrimination. The rapeseed in overfulfillment of quotas sold collectively by production teams goes for 54 yuan per jin, but the commune member privately negotiated price is 52 yuan per jin. For every 100 jin of rapeseed collectively sold, award sales of 15 jin of chemical fertilizer are granted, and 50 jin of rapeseed cake is returned to the seller. For the commune household, however, there is nothing similar when rapeseed is sold. Additionally, if a commune member household asks for payment in cash when he sells rapeseed, the departments concerned stipulate a non-cash accounting. Now, a new regulation here provides for no purchases of negotiated price rapeseed from private commune members, notice to be given whenever purchases are resumed. The masses of commune members are very upset about this and worry about not being able to sell their excess rapeseed. Tanqiao Commune, Liyang County. Li Weizhang [2621 4850 1757], Peng Huafeng [1756 5478 6917], and Yang Wuya [2799 0124 5895]. [Text] [Nanjing XINHUA RIBAO in Chinese 7 Jul 81 p 2] 9432

COTTON PLANTS BUDDING--Cotton plants in Jiangsu are growing well and budding. The 5 million mu of transplanted cotton now have 4-5 fruiting branches per plant on the average, while the 3 million mu that were planted by direct-sowing have 1-2 fruiting branches per plant. Buds begin to appear on more than 1 million additional mu. [Nanjing XINHUA RIBAO in Chinese 13 Jul 81 p 1]

CROP CULTIVATION--The peasants in Donghai County, Jiangsu Province, are cultivating 270,000 mu of peanuts and 680,000 mu of rice at present. They are taking effective measures to eliminate pests and insure good growth of the crops. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 29 Jul 81]

CSO: 4007/541

BRIEFS

RICE PRODUCTION--As of 29 July, the peasants in Yifeng County, Jiangxi Province, transplanted 61,000 mu of late rice, accounting for 55.4 percent of the planned late rice acreage. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 3 Aug 81]

CSO: 4007/541

EXISTENCE OF 'PRIVATE PERSONS' NOT A RETURN TO CAPITALISM

Jinan DAZHONG RIBAO in Chinese 9 Jun 81 p 2

[Article by Yan Shi [1484 4258]: "Discussion of 'Private Persons'"]

[Text] The Party Central Committee and the State Council have pointed out in the directive on actively developing diversification in farm villages: "Except during the busy farming seasons, some part-time laborers and auxiliary laborers should be allowed to be excused from collective work so that they may concentrate on managing family sideline activities, within their own capabilities (i.e., allowing the presence of 'private persons,' as described by the masses)." Recently, we went to Jinning and Heze prefectures to conduct farm village surveys, and what we saw and heard made us realize profoundly that this regulation by the Party Central Committee and the State Council is completely correct. It coincides with the actual situation of more people and less land in our nation's farm villages, and realizes the will of the millions of farmers. It will surely further mobilize the enthusiasm, initiative, and creativity of the individual commune members and forcefully promote the development and prosperity of the farm village economy.

But because of the influence of "leftist" mistakes, some people believe that "private persons" are "capitalists," and that allowing families of commune members to have "private persons" will affect collective production and lead to the "liberalization" of diversification. Facts prove that these views and worries are unfounded. So-called "private persons" are persons in a family who specifically take care of family sideline production and manage private plots. Family sideline activities and private plots are allowed in the party's policy as supplements to the socialist economy. Therefore, "private persons" engaging in family sideline activities and managing private plots are not capitalists. Also, whether there are "private persons" and how many there are to be are all determined by the prerequisites of assuring that the collective can complete its productive tasks and of determining the actual situation of each family's labor force. They can be changed at will, and of course they do not affect collective production. As for the saying that allowing "private persons" will lead to the "liberalization" of diversification is also unfounded. The gross production items of diversification in farm villages are uniformly managed by the collective. Those managed by the "private persons" involve only the use of small amounts of resources for engaging in scattered small items. Their products are procured in part by the supply and marketing cooperative, in part for export, and in part for sale on

the market. These are all operations along the road of socialist economy, and "liberalization" will not occur.

In the survey, we saw that allowing commune member families to have "private persons" has many benefits. Generally speaking, there are three: the first is that is can fully exploit the potential of labor resources and local material resources. "Private persons" are a simple, convenient, and easy way of solving surplus labor. It can allow part-time laborers and auxiliary laborers to do whatever they can, and it can allow skilled craftsmen and persons with technical skills in farm villages to practice their skills. The raw materials they use for sideline production are all local materials. This will fully and rationally utilize the scattered resources and create wealth for the society. The second [benefit] is that is can increase the income of commune members. The party branch secretary of the Dongmagai Brigade of Heze County said that last year the eight members of his entire family has a total income of nearly 5,000 yuan. Of this amount, 3,000 yuan came from the distribution of foodgrain and cotton production contracts of the production team and industrial and sideline production, while the remaining nearly 2,000 yuan was earned by a "private person" raising cattle. It seems that allowing "private persons" to specifically engage in family sideline activities is one way for farmers to create wealth and become rich. The third is that it benefits a prosperous economy, activates the market, and suits the various needs in the lives of the people in the towns and villages. Many "private persons" are skilled craftsmen, have technical skills, and can produce many unique handicrafts. Other "private persons" engage in various kinds of weaving, repair work, and catering services, which can provide a great convenience to the masses. The majority of "private persons" are engaged in raising domesticated animals and planting private plots. They also serve an important function in making the market prosper and in satisfying the needs of the people.

9296
CSO: 4007/472

MERITS OF ALLOWING PRIVATE PLOTS EXTOLLED

Jinan DAZHONG RIBAO in Chinese 9 Jun 81 p 2

[Article: "The Potential of Private Plots Is Great, and They Cannot Be Neglected--Investigating the Question of Private Plots"]

[Text] Since the Third Party Plenum, the 94 production teams of the Chengguan Commune of Shouguang County already have 68 private plots, covering an area of 3,100 mu, zoned for commune members. Surveys show that the income potential of private plots is great, and they cannot be neglected.

Whether There Are Private Plots or Not Makes a Big Difference

Xiyu Brigade took all private plots and handed them over to the collective some years ago. The 750 people of the entire brigade then worked on 1,300 mu of large fields, production efficiency was low, the cost was high, annual total income was only some 60,000 yuan, and the average per capita income of commune members was less than 70 yuan. In the autumn of 1979, the brigade implemented the spirit of the Third Plenum, slated 53 mu of land as private plots, and redistributed them to commune members--an average of 7 li per person. Commune members planted Chinese chive, celery, cauliflower, and Chinese lettuce in private plots while doing well the work of collective production. Last year, 120,000 jin of vegetables were produced, generating a new income of over 50,000 yuan. Each family's income was 350 yuan, and per capita income was 70 yuan. The income from the 53 mu of private plots constituted 77 percent of the total income from the collective, while the sum of the income from the collective and the income from the private plots was equal to twice the brigade's total income the previous year. The sum of the per capita average income from the two [sources] was equal to twice the per capita distribution of the previous year. Party branch secretary Xu Baonin [6079 0202 3046] profoundly realized that having or not having private plots makes a big difference!

Early Distribution Is Better Than Late Distribution

Xianbei Brigade and Zhaojia Brigade are neighbors. In the past, Xianbei Brigade lagged behind Zhaojia Brigade. But during the 10 years of chaos, Xianbei Brigade retained private plots, the income and gain of the commune members were large, and they became rich quickly. Last year, the private plots produced over 100,000

jin of vegetables, net income was 47,000 yuan, per capita income was 130 yuan, and with the addition of 72 yuan 5 jiao distributed by the collective, each person received over 200 yuan. Now, the entire brigade's families have bicycles, most farm families have sewing machines and watches, and over 90 percent of the farm families have savings in the bank.

Zhaojia Brigade, however, took back private plots several years ago. The communes received only some 80 yuan worth of things from the collective, and their life was not as good as that of Xianbei Brigade. The year before last, the brigade implemented the party's policy and rezoned 31 mu as private plots for the commune members to plant. Net income reached 39,000 yuan last year, and the per capita average was 70 yuan. With the addition of the distribution from the collective, average per capita income came to 167 yuan. Because the private plots were distributed late, commune members were financially weak and the degree of prosperity of their lives lagged far behind that of Xianbei Brigade. The party branch secretary, Liu Wenyu [0491 5686 3768], said: "Early distribution of private plots is better than late distribution of private plots. In the past, I took back the private plots of commune members. This was wrong, and now we have paid!"

Planting by the Collective Is Not as Good as Planting by the Individual

In some production brigades, the commune members' private plots are uniformly planted by the collective, in the belief that planting by the collective and planting by the commune members are the same. But Haojia Brigade's experience shows that planting by the collective and planting by the individual are not the same.

Haojia Brigade has 50 families, totaling 210 people. In the past, the brigade took over the 7 mu of private plots of the commune members, planted vegetables collectively, and distributed the produce to the commune members. In this way, the collective had to provide four laborers to plant vegetables each year. It also had to provide seeds, chemical fertilizer, farm chemicals, and irrigation costing over 700 yuan. The result was a lot of work, high cost, and little income. The maximum yield of vegetables per year was 4,200 jin; each person received a ration of 20 jin of vegetables; and the problem of vegetables for commune members could not be solved.

In the autumn of 1979, they redistributed the 7 mu of private plots to farm families for planting, with each person planting 3.3 li of land. Some families planted chive sprouts and celery last year, while some families planted cucumbers and tomatoes. They produced a total of over 50,000 jin of vegetables, and besides satisfying the personal consumption of the commune members, they sold the produce and earned an income of 21,000 yuan, or 100 yuan per person. The party branch secretary of the brigade, Hao Shusheng [6787 2885 3932], said with profound realization: "Allowing farm families to plant private plots enables us to dig for the potential in man and the land better than planting by the collective."

9296
CSO: 4007/472

TAIAN PREFECTURE INCREASES WATER CONSERVANCY PROJECTS TO FIGHT DROUGHT

Jinan DAZHONG RIBAO in Chinese 24 Jun 81 p 1

[Article: "Field Water Conservancy Construction Plays Major Role in Fighting Drought; Since Spring This Year, Taian Prefecture Has Diverted or Lifted 1.19 Billion Cubic Meters of Water To Irrigate 2.9 million Mu of Wheat Twice and To Assure On Time Planting of 2.78 Million Mu of Spring Crops"]

[Article: Taian Prefecture's field water conservancy projects have shown tremendous power in combating this year's drought to save the wheat and to save spring planting.

In 4 consecutive years of capital construction of farmlands beginning in the winter of 1975, Taian Prefecture has built seven large and medium size reservoirs, 87 small reservoirs, and 530 dams to increase water storage capacity by 310 million cubic meters. It has sunk 16,400 new wells, installed pumps on 14,000 wells, and built water pumping stations at 479 places, extending the irrigated area by a total of 840,000 mu in addition to existing water conservation facilities. Since Spring of this year, the total quantity of water diverted or lifted has been 1.19 billion cubic meters for the watering more than twice of the prefectures 2.9 million mu of wheat, and to assure planting on time of 2.78 million mu of spring crops. Formerly when some communes and brigades encountered a drought as serious as this year's, they would harvest nothing. But now, because these places have water, the spring seedlings are flourishing, and wheat yielded a bumper harvest. Manzhuang and Xiazhang communes in the western part of Taian County are notorious drought areas in the county. Now, however, as a result of the building of victory ditches and victory reservoirs in upper reaches, the more than 60,000 mu of wheat in the two communes has been watered twice, and in a year of severe drought, the wheat still produced a harvest better than last year's. The Wuyan electric irrigation station in Dongping County began raising water from the Daqing River on 11 March. As of the end of May it had already raised 2.06 million cubic meters to water 18,000 mu of wheat fields three and four times, and to water 11,000 mu of spring fields as well.

The struggle against drought has also aroused the broad masses of cadres and commune members to do further water conservancy construction. As a result of needs to combat drought, numerous communes and brigades have adjusted general methods to local situations to build some small water conservancy projects. Statistics show that since the lunar New Year, the prefecture has worked on 7,948 separate water conservancy projects including sinking of new wells, repair of ditches, digging of

springs, damming of waterflow, and building of pumping stations, of which 5,755 projects have already been completed. of these, newly sunk wells fitted with pump number 594; existing wells newly equipped with pumps number 475; and pump wells from which potential has been more fully tapped number 851, thereby making available new water resources, enlarging the irrigated area, and increasing capacity to combat drought. In order to meet urgent needs to fight drought, Ligou Commune in Pingyin County organized 600 laborers for a steady month long effort to extend 1,800 meters of "banbianjing" [0584 6708 0064] reservoir irrigation ditches, not only enlarging the natural flowing irrigation of 200 mu of land, but also solving the problem of water so that seeds could be dibbled on 3,000 mu of spring fields. In addition to making full use of existing reservoirs and catchments to fight drought, the Xiangang Commune in Taian County also interdicted the flow of the river at 137 places, dug more than 280 mountain pools and ponds, and built 18 small pumping stations.

The facts in the struggle against drought demonstrate once again that water conservancy is the lifeblood of agriculture. Development of the capital construction of farmlands, improvement in the conditions of production, and enlargement of the irrigated area are fundamental measures for hastening the development of agriculture. Taian Prefecture plans to provide the necessary workforce this winter and next spring to build and equip some small scale projects from which results may be obtained in the same year in order to promote development of agricultural production.

9432
CSO: 4007/514

SYSTEMS OF RESPONSIBILITY FOR PRODUCTION USED IN SHANDONG DESCRIBED

Jinan DAZHONG RIBAO in Chinese 26 Jun 81 p 1

[Article: "More Than 95 Percent of Rural Accounting Units in Shandong Province Have Instituted Various Forms of a System of Responsibility"]

[Excerpts] Since the Third Plenary Session of the 11th Party Central Committee, Shandone Province has conscientiously implemented a series of major documents and instructions from the Central Committee on hastening the development of agriculture, achieving fine results in the steady eradication of "leftist" influences, and the adaptation of general methods to local situations for the building and perfection of various forms of a system of responsibility for agricultural production. Of the nearly 400,000 basic accounting units in the province, more than 95 percent have established a system of responsibility for production. Those using a system of specialized contracting, with calculation of remuneration being linked to output to the workforce amount to 30.3 percent. Those with a system whereby all quotas are fixed for payment of a single reward, with production being linked to teams number 6.3 percent. Those with a system of fixing output quotas on a household basis or fixing work quotas on a household basis number 25.5 percent, and those with a system whereby small segments of work are contracted for, with remuneration being calculated on the basis of fixed quotas amount to about 20 percent. Establishment and perfection of systems of responsibility has effectively brought into play the superiority of a collective economy, has aroused the enthusiasm for labor of commune members, has promoted development of agricultural production, has increased the earnings of the collective and of individual commune members, and a fine situation of political stability, economic prosperity, and peasant content has arisen in the far flung rural villages.

The fundamental objective in establishing systems of responsibility is to combine full play of the superiority of the collective economy with arousal of the initiative of individual commune members for further emancipation of agricultural productivity, advancement of the all around development of agriculture, and increase in the earnings of the collective and of commune members. Since the Third Plenary Session, the province has had consecutive years of bumper harvests in agriculture. Both per unit yields and total production of grain, cotton, and peanuts have created all-time records. In the forestry, animal husbandry, sideline, and fishery industries too, varying degrees of development has taken place. Last year, gross earnings for the province's production brigades and production teams totaled 13.84 billion

yuan, a 2.1 billion yuan increase over the previous year, for a 17.9 percent increase. Expenditures as a proportion of total revenues dropped from 39.9 percent in 1979 to 36.3 percent. Average per capita distributions to commune members were 105.20 yuan. They increased by 13.10 yuan in 1979 and again increased last year by 23.70 yuan, increases for the 2 years totaling 36.80 yuan. Some comparatively prosperous counties, communes, and production brigades also came into being. Counties and municipalities in the province in which distributions per capita averaged more than 200 yuan numbered 12, an increase by 10 over the previous year. There were 14 communes with average per capita incomes of 300 yuan, an increase of 13 over the previous year. Production brigades with average per capita distributions of more than 300 yuan numbered 644, a 597 increase over the previous year. In Yantai Prefecture, distributions per capita averaged 191 yuan, a 35 yuan increase over the previous year. In the long poverty stricken and backward four prefectures in the northwest, per capita distributions averaged 87.30 yuan, a 36.40 yuan increase over the previous year. In strengthening and perfecting systems of responsibility for agricultural production in Shandong Province, development remains uneven, and even in units were a fairly good job has been done there are some new problems requiring study and solution. Right now all jurisdictions are involved in diligent summarization of the lessons of experience for the adoption of measures for improvements so that various forms of a system of responsibility will be further perfected.

9432
CSO: 4007/523

BRIEFS

SUMMER GRAIN PROCUREMENT OVERFULFILLED--Shandong reaped a "good harvest" from its summer grain crops this year despite severe droughts. Following the "bumper harvest," the rural cadres and masses enthusiastically delivered grain [as agricultural tax] and sold their surplus grain to the state. By 10 July, 2,803 million jin of summer grain had entered state granaries, overfulfilling the procurement task assigned by the state. The date of fulfillment was 1 month earlier than that of last year, and the quality of grain delivered was superior to that of previous years. [Jinan DAZHONG RIBAO in Chinese 13 Jul 81 p 1]

PEANUT SOWING COMPLETED--Shandong has planted 1.17 million mu of summer sown peanuts. When spring peanuts are included, a total of 9.5 million mu have been planted, thus overfulfilling this year's peanut sowing plan. Most of the seedlings are growing well. Among the 159,300 local production teams growing peanuts, over 95 percent have set up some form of production responsibility system this year. [Jinan DAZHONG RIBAO in Chinese 18 Jul 81 p 1]

CSO: 4007/540

BRIEFS

WENXI COUNTY BUMPER WHEAT PRODUCTION--The 480,000 mu of wheat in Wenxi County of Shanxi yielded a record harvest this year with both per-mu and total yield exceeding last year's by more than 100 percent. The total output was over 150 million jin, or 5.9 percent higher than the former record yield of 1976. The yield from this single crop of wheat this year even exceeded the total grain output of last year by more than 8 million jin. In some wheat growing communes and brigades, the average per capita production of wheat was 1,000 jin this year. [Taiyuan SHANXI RIBAO in Chinese 13 Jul 81 p 1]

QUWO COUNTY WHEAT PROCUREMENT--Following a bumper wheat harvest, commune members in Quwo County, Shanxi, enthusiastically paid their agricultural tax in grain and sold surplus grain to the state, fulfilling this county's wheat procurement quota of 12 million jin by 3 July. In addition, they have sold to the state 950,000 jin of wheat over and above the procurement quota, and such sales are still underway. [Taiyuan SHANXI RIBAO in Chinese 13 Jul 81 p 1]

TECHNOLOGY CONTRACTS SIGNED--In Ji County 1,120 peasant households have signed 1,002 contracts with county and commune science and technology units. Following institution of systems of responsibility for production, the enthusiasm of the broad masses of peasants for scientific farming reached unprecedented heights. However, they were dissatisfied with the former method of relying on administrative organizations, and administrative orders that coerced promotion of science and technology. How to solve this contradiction? the secretary of the County CCP Committee, An Kang [1344 1660] paid a visit to Fan Jiexu [5400 4814 4958], a commune member in Zhongduo Brigade. This person used to be a "native expert" in scientific farming. This year, his household of four people had contracted production on 7 mu of autumn fields for production of a fixed quota of 370 jin per mu. He was planning to do a scientific experiment, but he was apprehensive lest use of new techniques might result in a drop in yields and the unfulfillment of the quotas for which he had contracted. An Kang introduced him to the signing of a contract with the County Agriculture Techniques Promotion Station for experiments in applying only chemical fertilizer and herbicide on corn. The Agriculture Techniques Promotion Station would be responsible for supplying seeds, fertilizer, and technical guidance. He would assure doing things in accordance with technical operating regulations and keep good records of the experiments. If as a result of improper technical measures output dropped, the technical promotion station would make compensation. If reduced yields resulted from violation of operating regulations, he would be responsible himself. All increases in yields would go to the peasant himself. Such a system would make the farm technology department have a sense of responsibility and would make the peasant get rid of his fear of losing yield. The departments concerned have promptly promoted this method, and throughout the county 1,120 peasant households have signed 1,002 technology contracts. [Text] [Taiyuan SHANXI RIBAO in Chinese 16 Jun 81 p 1] 9432

CSO: 4007/514

BUMPER GRAIN OUTPUT ACHIEVED IN RECENT YEARS

Chengdu SICHUAN RIBAO in Chinese 13 Jul 81 p 2

[Excerpt] Due to the interference by the "gang of four," Sichuan's agriculture was close to total failure in 1976 when its total grain output was down to 49.7 billion jin, its per capita grain consumption was only 369 jin, and its per capita distribution income was 53 yuan. After the downfall of the "gang of four," bumper harvests were achieved in 4 consecutive years between 1977 and 1980. Grain production rose by a total of 15.5 billion jin in these 4 years. The total output reached 65.2 billion jin, and the average annual increase was over 3.8 billion jin. The highest annual increase was 6.3 billion jin. With the exception of a small number of items, the majority of multiple undertakings also registered a much higher output, particularly in rapeseed and live pig production. By the end of 1980, the number of live pigs in inventory was 51.46 million head, the number of pigs removed from inventory [during 1980] was 31.27 million head, and the number in inventory was 66 percent higher than that of 1976. The total rapeseed output was 11.63 million dan [as published], an increase of 111 percent over 1976. The total income of basic accounting units was 11.2 billion yuan; the average distribution income of commune members was 82.8 yuan, an increase of 54.4 percent over 1976; and the per capita grain consumption was 527 jin.

CSO: 4007/540

BRIEFS

DIVERSIFIED ECONOMY--Yongkang County, Zhejiang Province, has further developed diversified economy in rural areas. Its total output value from diversified economy in rural areas in 1980 reached 44.42 million yuan in the county, accounting for 50.6 percent of the total output from agricultural production in that year. [Hangzhou Zhejiang Provincial Service in Mandarin 1040 GMT 27 Jul 81]

CSO: 4007/541

II. PUBLICATIONS

TABLE OF CONTENTS OF 'KUNCHONG XUEBAO' NO 2, 1981

Beijing KUNCHONG XUEBAO [ACTA ENTOMOLOGICA SINICA] in Chinese No 2, May 81 inside back cover

[Text] The Relationship between the Chemical Structure of 1-(3, 4-Dichlorophenyl)-2, 2, 2-Trichloroethyl Acetate Analogues and Insecticidal Activities.....Leng Xinfu [0397 2946 1133], Zhou Houan [0719 0624 1344] and Hu Juhua [5170 5468 5478], et al., all of the Institute of Zoology, Chinese Academy of Sciences (121)

The Nucleic Acid Metabolism in the Fat Body of Coccinella septempunctata L. .....Wu Qiuwan [0702 4428 7159] and Guan Xuechen [7070 7185 6591], both of the Institute of Zoology, Chinese Academy of Sciences (127)

The Distribution, Translocation and Function of Semen in the Female Reproductive Systems of the Armyworm Moth (Leucania separata Walker).....Zhao Wanyuan [6392 8001 3293], Kunming Institute of Zoology, Chinese Academy of Sciences (135)

The Inheritance of Red Eye Color Mutant in Culex pipiens pallens Coq. .....Huang Pinjian [7806 0756 4702], Miao Jianwu [4924 1696 0710] and Jiang Wenbin [5592 2429 2430], all of the Shanghai Institute of Entomology, Chinese Academy of Sciences (142)

Influence of Food Factors on Colony Formation by Coptotermes formosanus Shiraki.....Huang Liangwen [7806 0081 2429] and Chen Liling [7115 7787 3781], both of the Guangdong Institute of Entomology (147)

The Reproductive Rate and Economic Threshold of the Brown Planthopper Nilaparvata lugens.....Ding Zongze [0002 1350 3419], Chen Maolin [7115 5399 2651] and Li Peiyuan [2621 3099 0037], all of the Suzhou Agricultural Institute, Jiangsu (152)

Hemolymph Protein Changes of Heliothis armigera (Hubner) after Infection with Nuclear Polyhedrosis Viruses..... Ding Cui [0002 5050] and Cai Xiuyu [5591 4423 3768], both of the Institute of Zoology, Chinese Academy of Sciences (160)

Studies on the Acridoids of Xinjiang Uyghur Autonomous Region: Distribution of Acridoids II. .....Chen Yonglin [7115 3057 2651], Institute of Zoology, Chinese Academy of Sciences (166)

Studies of the Lymantriid Moth Lymantria xylina Swinhoe .....Li Yougong [2621 0645 1872], Chen Shunli [7115 7311 4539] and Xie Qingmei [6200 0615 2812], et al., all of the Fujian Agricultural College; Li Yunwei [2621 6663 1602], Zheng Xueqing [6774 1331 3237] and Zhu Zhengwen [2612 2398 2429], all of the Fujian Agricultural Sciences Research Institute; et al. (174)

New Species of Chinese Aradidae (Hemiptera-Heteroptera: Aradidae).....Liu Shengli [0491 0524 0448], Tianjin Museum of Natural History (184)

A New Chauliops (Heteroptera: Lygaeidae) from China..... Zheng Leyi [6774 2867 1837], Department of Biology, Nankai University (188)

A Revision of the Genus Himeunka Matsumura et Ishihara (Homoptera: Delphacidae).....Ge Zhonglin [5504 6945 7792], Anhui Agricultural College; Ding Jinhua [0002 6930 5478] and Tian Lixin [6944 4539 2450], both of the Jiangsu Agricultural College (190)

New Species and New Records of the Genus Ancylolomia Hubner from China with Notes on Specifying the Palaearctic Species Groups (Lepidoptera: Pyralidae).....Wang Pingyuan [3769 1627 6678] and Song Shimei [1345 1102 5019], both of the Institute of Zoology, Chinese Academy of Sciences (196)

Notes on the New Genus Flavicorniculum Chao et Shi of Tachinidae from China.....Zhao Jianming [6392 1696 6900] and Shi Yongshan [0670 3057 0810], both of the Institute of Zoology, Chinese Academy of Sciences (203)

Four New Species of the Genus Delia from Liaoning, China (Diptera: Anthomyiidae).....Xue Wanqi [5641 8001 3823], Bensi Public Health and Epidemiology Station (209)

Three New Species of Tabanids from South China (Diptera: Tabanidae).....Liu Weide [0491 4850 1795], Shanghai Institute of Entomology, Chinese Academy of Sciences (216)

A New Species of the Genus Aridelus Marsh. (Hymenoptera: Braconidae, Euphorinae).....Wang Jiaru [3769 1367 0320], Department of Biology, Shaanxi Teachers' University (219)

A New Species of Aponychus from China (Acarina: Tetranychidae).....Wang Huifu [3769 1979 5346], Institute of Zoology, Chinese Academy of Sciences (221)

Scientific Notes

Effects of Several Used Insecticides on Coccinellid Predators .....Ying Songhao [2019 2646 7729], Zou Yuzhen [6760 6877 3791] and Mei Xuezhen [2734 7185 3791], all of the Shanghai Pesticide Institute (223)

Observations on Multiple Feeding Habits of Forcipomyia (Lasiohelea) taiwana (Shiraki).....Qiu Minghua [5941 2494 5478], Department of Parasitology, Chongqing Medical College (228)

Observations on the Daily Activity of Ixodes ovatus Neum. .....Deng Guofan [6772 0948 5672], Institute of Zoology, Chinese Academy of Sciences (231)

Duration of the Life History of Dermacentor silvarum Olenev. (Acari: Ixodidae) under Different Temperatures and Humidities .....Yao Wenbing [1202 2429 3521] and Chen Guoding [7115 0948 1353], both of the Nei Monggol Medical College, Huhehot (233)

9717
CSO: 4007/440

TABLE OF CONTENTS OF 'ZHONGGUO SHOUYI ZAZHI' NO 5, 1981

Beijing ZHONGGUO SHOUYI ZAZHI [CHINESE JOURNAL OF VETERINARY MEDICINE] in Chinese
No 5, 22 May 81 inside front cover

[Text] Main Contents

The Removal of Chicken Tapeworms with Chinese-made Niclosamidum.....Lin Kunhua [2651 2492 5478] and Jiang Jinshu [5592 6855 2579], both of the Department of Veterinary Medicine, Beijing Agricultural University; et al. (2)

A Survey of Gastric Ulcers in Pigs.....Li Jinchang [2621 6651 2490], Zhejiang Agricultural University (6)

Pulmonary Adenoma in Buffalo: Report of One Case..... Xiong Jiachun, et al. (7)

Coccidiosis in Calves Caused by E. bukidnonensis..... Mao Qixiang, et al. (9)

Leukosis of Dairy Cattle.....Wang Honghui, et al. (11)

Acute Lymphoid Leukosis in Horses: Report of Clinical Cases.....Su Qingxiang [5685 1987 4382] and Wang Guilan [3769 2710 5695], both of the Beian Agricultural School, Heilongjiang (12)

X-ray Diagnosis on Thoracic Diseases of Domestic Animals .....Qin Xiaosu [4440 2400 5685], Department of Veterinary Medicine, Shanxi Agricultural University (16)

Ammonia Poisoning in Farm Cattle: Report of Three Cases .....Wang Hongyong, et al. (24)

Nitrite Poisoning in Ruminants: A Review.....Yuan Hui [5913 1979], Department of Veterinary Medicine, Hunan Agricultural College (34)

Immunity in Pigs.....Guo Yupu [6753 3768 3877], Beijing Agricultural University (37)

9717
CSO: 4007/480

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ORG: All of the Department of Agronomy, Huazhong College, Wuchang

TITLE: "The Investigation of the Inheritance of Fertility of the Offspring Produced by Interspecific Hybridization and Backcrossing between Autotetraploid Asiatic Cotton (Gossypium arboreum) and Upland Cotton (G. hirsutum)"

SOURCE: Beijing YICHUAN XUEBAO [ACTA GENETICA SINICA] in Chinese No 2, Jun 81 pp 149-157

TEXT OF ENGLISH ABSTRACT: For the purpose of breeding a cytoplasmic male sterile type in cotton, the cross of the autotetraploid Asiatic cotton (produced by treating diploid Asiatic cotton with colchicine) with American Upland cotton as the male plant was performed in 1973; several cross-pollinated seeds were obtained. The resulting hybrid F_1 used as the female plant was backcrossed repeatedly with Upland cotton for several years. By the end of 1979, F_1 and the offspring of four generations of backcrossing had been obtained. A study of the genetic variability of fertility of these materials was carried out.

The autotetraploid Asiatic cotton was completely male sterile, and no self-pollinated seeds were produced. When the autotetraploid cotton was pollinated with Upland

[Continuation of YICHUAN XUEBAO No 2, Jun 81 pp 149-157]

pollen, some bolls with one or more viable seeds were set. The lowest fruiting percentage of the plants of the autotetraploid Asiatic cotton x Upland in 1976 was 5.3 percent, and the highest was increased to about 40 percent in 1975 and 1979. By using Upland cotton as the recurrent male plant in backcrossing with F_1 hybrids as the female plant, the fruiting percentage of the backcrossed plants was 0-6 percent. The BC_1F_1 plants formed no bolls when they were pollinated by Upland cotton pollen, with the exception of one plant which set two bolls in one year from 20 flowers which were pollinated with Upland cotton pollen. But the fruiting percentages of backcrossed plants was raised to 0-2 percent as the plants of BC_1F_1 overwintered in the greenhouse. Two BC_2F_1 plants were obtained an only one of them grew up normally. The fruiting percentage of these plants was greatly increased, up to 70-80 percent, due to backcrossing. The plants of BC_3F_1 and BC_4F_1 populations both segregated into male fertile and male sterile types. The male sterile plants of BC_3F_1 and BC_4F_1 showed different responses to temperature. As the temperature was low in the field (before the beginning of July and after the end of August), a portion of the male sterile plants showed their fertility recovered and produced by bolls by self-pollination, while another portion of the male sterile plants remained self-sterile during the whole flowering stage and no self-pollinated bolls could be found.

The viability of the pollen of the interspecific hybrids and the offspring of backcrossing was studied by biological and chemical approaches in our laboratory. The

[Continuation of YICHUAN XUEBAO No 2, Jun 81 pp 149-157]

chromosome behavior at meiosis in F_1 hybrids of the autotetraploid Asiatic cotton x Upland and in the offspring backcrossed by Upland was also studied.

AUTHOR: CHEN Ying [7115 5391]
ZUO Qiuxian [1563 4428 0103]
LI Shuyuan [2621 3219 1254]
LU Deyang [0712 1795 2254]
ZHENG Shiwen [6774 0113 2429]

ORG: All of the Institute of Genetics, Chinese Academy of Sciences, Beijing

TITLE: "Green Plants Regenerated from Isolated Rice Pollen Grains In Vitro and the Induction Factors"

SOURCE: Beijing YICHUAN XUEBAO [ACTA GENETICA SINICA] in Chinese No 2, Jun 81 pp 158-163

TEXT OF ENGLISH ABSTRACT: Oryza sativa subsp. keng was used as the experimental material in this study. Rice panicles with microspores at late uninucleate stage were collected and pre-treated at about 10°C for 10-30 days. Pollen grains were isolated and prepared in either of the following ways: (1) Preculturing the anthers on liquid medium for 2-4 days, then separating the pollen grains by the crush method (Nitsch, 1974), and preparation at a concentration of 2 x 10^4 microspores per ml; (2) Anthers were inoculated by a liquid medium, where pollen grains were continuously liberated from the anthers and were then transferred to a fresh medium periodically. The free pollen grains shed at various times from the anthers were duly collected.

[Continuation of YICHUAN XUEBAO No 2, Jun 81 pp 158-163]

Isolated microspores were then incubated in the shallow layer of a liquid medium. The media used for cultures were: (1) N_6 medium supplemented with: serine, 100 mg; glutamine, 800 mg and m-inositol 5 g per liter as is done by Nitsch, or lactalbumin hydrolysate (LH) 500 mg/l; (2) Conditioned medium prepared with N_6 + LH medium, in which anthers were incubated for seven days, and then were removed with free pollen by centrifugation; (3) Potato medium, potato extract 20 percent (W/V) plus one half nitrogen source of N_6 medium. All these media contained 2, 4-D 2 mg/l and sucrose 3 percent.

The results obtained are as follows:
1. Isolated pollen grains only gave some multicellular masses and calli when anthers were not precultured, but pretreated at low temperatures for about 10 days.
2. Several green and albino plantlets regenerated from the pollen grains when anthers were precultured for 2 days and pretreated at low temperatures for about 20 days.
3. Many calli and green and albino plantlets were obtained from those anthers pretreated for 10 days and precultured more than 3 days. As high as 30 percent frequency of callus differentiation could be attained.
4. The initiation and sustained divisions of microspores and even the differentiation of the calli were strongly influenced by anther cold-pretreatment and preculture. If the anther preculture was maintained for less than two days, plantlets were not regenerated. Anther cold-pretreatment not only could doubly increase the

[Continuation of YICHUAN XUEBAO No 2, Jun 81 pp 158-163]

frequency of calli induction from isolated pollen, but also had a replacing effect on anther preculture.
5. When the potato medium was used in callus induction, more plantlets, especially green ones, could be regenerated than from other media.

AUTHOR: GU Mingguang [6253 2494 0342]

ORG: Institute of Genetics, Chinese Academy of Sciences, Beijing

TITLE: "Giemsa Banding of Maize (Zea mays) Chromosomes"

SOURCE: Beijing YICHUAN XUEBAO [ACTA GENETICA SINICA] in Chinese No 2, Jun 81 pp 175-179

TEXT OF ENGLISH ABSTRACT: The main results obtained are presented as follows:
1. Comparison of Giemsa differential staining with aceto-carmine staining.
It was shown that there was a small knob on the short arm of chromosome 9 and that the satellite on the short arm of chromosome 6 is small with common aceto-carmine staining technique. However, with Giemsa staining technique, the terminal knob on the short arm of chromosome 9 and the satellite on chromosome 6 were prominent. In addition, there were small knobs or bands on the long arm of chromosomes 1, 2, 6 and 7. These small knobs or bands could not be seen with the conventional aceto-carmine staining technique.
2. Giemsa banding of meiotic chromosome.
It was observed that at the zygotene stage homologous heterochromatic telomeres apparently began to fuse. At the pachytene stage most of the bands or knobs were situated in the subterminal region of the chromosomes. At the diplotene and diakinesis stages, 8 of the 10 chromosomes had prominent heterochromatic bands, with the other two showing no banding.

[Continuation of YICHUAN XUEBAO No 2, Jun 81 pp 175-179]

3. Giemsa banding of mitotic chromosome.
By applying the Giemsa staining technique to the mitotic chromosomes, it was found that Giemsa bands were discernible at all the main mitotic stages of the maize. At the metaphase, prominent heterochromatic bands were present on 8 of the 10 pairs of chromosomes, with the other two pairs showing no banding.

In our experience, the Giemsa banding technique can bring out more bands or knobs than can the common aceto-carmine technique. Therefore, the Giemsa technique might be very useful in distinguishing heterochromatin from euchromatin in maize chromosomes, and might open up a new vista in the cytogenetics of maize.

AUTHOR: HONG Xijun [3163 6932 6874]

ORG: Department of Biology, Southwestern Teachers College

TITLE: "Genetic Research on the Chimera of Awned Mutations in M_1 Generations of Triticum aestivum"

SOURCE: Beijing YICHUAN XUEBAO [ACTA GENETICA SINICA] in Chinese No 2, Jun 81 pp 180-188

TEXT OF ENGLISH ABSTRACT: Stadler (1945) and Nybom (1954) considered that all new mutation in a spike of the M_1 generation would be heterozygous. According to this hypothesis, if a mutation is recessive, its effects will appear only in the M_2 generation, a view that has been generally received up to now.

This article reports the experimental results of γ-ray induced chimera of awned mutation in the M_1 generation of Triticum aestivum L. Dry seeds of 10 varieties (or lines) were treated with γ-rays of ^{60}Co during 1977-1979. As a result, seven varieties were induced chimera of awned mutation. Among these treated varieties (or lines), the "Great Dragon No 1" continued to show this chimera for three years.

Results of genetic research are presented as follows:
1. Awned mutation of chimera is a recessive mutation. When the awned mutant was backcrossed with a tipped parent, first generation hybrids were all tipped and the F_2 generation was segregated as the Mendelian ratios.

[Continuation of YICHUAN XUEBAO No 2, Jun 81 pp 180-188]

2. The spikes of awned mutation of the chimera kept their characteristics and did not segregate in the offspring.
3. When we irradiated the seeds of the awned mutant with γ-rays, the mutation could change back to being tipped.
4. The chromosome morphology and chromosome number of the pollen mother cell and somatic cells of the mutant did not produce any conspicuous changes that could be recognized visually.

These results suggest that awned mutations of chimera in the M_1 generation are a recessive gene mutation. The genotypes of possible mutants have changed from $B_1B_1b_2b_2$ to $b_1b_1b_2b_2$. Our experiments show a homozygous recessive mutation might occur in the M_1 generation. The M_1 generation is worthy of note as a mutation generation.

9717
CSO: 4009/333

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JPRS 78833

26 August 1981

China Report

AGRICULTURE

No. 161

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JPRS 78833

26 August 1981

CHINA REPORT

AGRICULTURE

No. 161

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

Recent Drought, Flood Situation Reported
(GUANGMING RIBAO, 22 Jul 81) 1

Work on Control of Drought, Waterlogging, Alkalization Reported
(Fan Dongsheng; WENHUI BAO, 6 Jul 81) 3

Artificial Replenishment of Underground Water Urged
(Zheng Jingshan; RENMIN RIBAO, 9 Jun 81) 5

Sugar Production Reaches Three Million Tons
(GUANGMING RIBAO, 19 Jul 81) 8

Low Temperatures Damage Early Development of Paddy Rice
(Li Rongqian, et al; ZHIWU XUEBAO, May 81) 9

Sharp Increase in Area Planted to Tobacco
(ZHONGGUO CAIMAO BAO, 9 Jun 81) 13

Achievements of Hybrid Rice Experts Reported
(GUANGMING RIBAO, 23 Jun 81) 14

Zhang Xiancheng, by Gui Tinggong
Yan Longan, by Zhang Xiuping

Fujian

Late Crop Techniques To Recoup Early Crop Losses Discussed
(Liu Zhicheng; FUJIAN RIBAO, 18 Jul 81) 19

Hebei

Generally Good Harvests Despite Drought in Shijiazhuang Reported
(ZHONGGUO XINWEN, 7 Jul 81) 25

Jiangsu

Jiangdu Water Project 'Improves Water Conservancy' in Area
(XINHUA RIBAO, 28 Jun 81) 27

Shaanxi

Individual Wheat Production Quotas Discussed
(RENMIN RIBAO, 16 Jul 81) 29

Shandong

Livestock Figures Given, Livestock Raising System Outlined
(DAZHONG RIBAO, 14 Jul 81) 31

Briefs
New Variety Soybean 33

Shanxi

Rural Electrification Efforts Detailed
(Hou Xiangchu; SHANXI RIBAO, 12 Jul 81) 34

Sichuan

Party Official Reports on Agricultural Diversification
(SICHUAN RIBAO, 15 Jun 81) 37

Farmers See Scientific Technology as Key 'To Improved Yield'
(GUANGMING RIBAO, 6 Jul 81) 39

'Seizing the Two Farming Tasks' Basically Completed
(SICHUAN RIBAO, 12 Jun 81) 41

Cottonfield Management Meeting Held, Three Demands Made
(SICHUAN RIBAO, 17 Jun 81) 42

Rich Underground Water Found in Lateritic Stratum Region
(GUANGMING RIBAO, 20 Jul 81) 43

II. PUBLICATIONS

Publications

Table of Contents of 'NONGYE JIXIE' No 6, 1981..... 45

HONG KONG MEDIA ON CHINA

Henan

New Cooperative Movement Involving Share Purchases Reported Underway
(CHENG MING JIH PAO, 22 Jul 81) 47

ABSTRACTS

AGRICULTURAL EXPERIMENTATION

SHANGHAI NONGYE KEJI /SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY/ No 3, 5 Jun 81 49

YICHUAN /HEREDITAS/ No 4, Jul 81) 51

HUBEI NONGYE KEXUE /HUBEI AGRICULTURAL SCIENCES/ No 7, Jul 81..... 52

PLANT PROTECTION

ZHIWU BAOHU /PLANT PROTECTION/ No 3, 8 Jun 81 54

VETERINARY MEDICINE

XUMU YU SHOUYI /ANIMAL HUSBANDRY AND VETERINARY MEDICINE/ No 3, 20 Jun 81 57

SHOUYI KEJI ZAZHI /JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY/ No 6, 1981 59

ZOOLOGY

DONGWUXUE YANJIU /ZOOLOGICAL RESEARCH/ No 1, Feb 81..... 61

I. GENERAL INFORMATION

RECENT DROUGHT, FLOOD SITUATION REPORTED

Beijing GUANGMING RIBAO in Chinese 22 Jul 81 p 1

[Article: "Responsible Person of the Central Meteorological Bureau Answers Questions by Reporter Concerning Recent Drought and Floods and Future Trends In Our Nation"]

[Text] Recently, the responsible person of the Central Meteorological Bureau answered questions by NCNA reporters concerning recent drought and floods and future trends in our nation. The questions and answers are as follows:

Question: This year, continuous spring and summer drought occurred over large areas in our nation's northern regions. What is the situation now?

Answer: The drought that lasted from summer to spring has persisted for a long time and the situation is relatively serious in Beijing, Tianjin, Shanxi, Shandong, Hebei, Henan, Shaanxi, Ningxia, central Nei Monggol, central and eastern Gansu, western Liaoning, northern Jiangsu and northern Anhui. But since the middle 10 days of June, several relatively heavy rains have occurred in most of the above regions, and the drought has basically been alleviated.

Question: Since the arrival of the rainy season, what is the situation of rain throughout the nation?

Answer: From the latter half of June to the first half of July, rainfall over most of the regions throughout the nation has visibly increased, flood damage has occurred in the southwest, southern China and parts of the northeast. Torrential rains occurred between the last 10 days of June to the middle 10 days of July in Xichang in Sichuan Province, the southern region of Liangshan, and most of the regions of the Sichuan Basin. At parts of the regions, extremely heavy torrential rains fell causing heavy floods in mountain regions, the water levels in rivers drastically rose, dams of reservoirs burst, highways were destroyed, farmland was submerged, and houses were washed away. After the rain, large amounts of water and big floods occurred in Minjiang, Jialingjiang, Tuojiang, Peijiang, causing serious loss to industrial and agricultural production, people's lives and property. From July 14, the Sichuan Basin basically had no more rain. This is beneficial to preventing floods. In addition, torrential rains and extremely heavy torrential rains occurred in Guangdong and Guangxi from the end of June to the beginning of July in southern China. Continuous heavy rain and torrential rain fell from the last 10 days of June to the first 10 days of July over Heilongjiang Province's Hejiang,

Mudanjiang, Nenjiang, Qiqihar and such regions and cities. The amount of rainfall was one to two times that in ordinary years during the same period. Part of the regions were flooded.

It can be seen from the above situation that the regions suffering damage from torrential rains are mostly in the south. If we look at the weather in ordinary years, the period from the last 10 days of July to the first 10 days of August is the period of more rain in the north, therefore, while continuing to care about the damage by floods in the south, we must pay attention to the trends of rain and flooding in the northern regions.

Question: What is the recent weather trend?

Answer: Analysis of the recent weather situation shows that for the coming few days, the southwesterly warm and damp air flow west of the subtropical high pressure over the western Pacific will strengthen again and will flow towards our nation's continental heartland. The cold air carried by the long wave trough of the westerly belt of western Mongolia will move towards the east and slant towards the south. The continued encounter of the cold and warm air will form heavy rain. Preliminary forecasts indicate relatively heavy rain will fall from west to east over the Yellow River valley in the north, the Hai River valley, the Wei River valley, and the Liao River valley. Each region should emphasize the strengthening of flood prevention and measures to drain flood water. Drought has also occurred in some regions in the south during the previous period, especially in some regions in Guizhou, since the beginning of spring, there has been less rain and there has been drought. From the middle 10 days of June to the first 10 days of July, because of continuous clear weather and high temperatures, there was a lot of evaporation which made the drought become more severe. During the middle 10 days of July, the drought in western and northern Guizhou has already been alleviated, but less rain has fallen over the eastern and central regions, and drought still persists. The rainy season over the middle and lower reaches of the Changjiang was shorter this year, the amount of rain was less, peak summer has arrived now, and these regions must be on guard against the occurrence and development of summer drought. At present, a typhoon is forming to the southeast of our nation's Taiwan Province, preliminary estimates show this typhoon will affect the coastal regions of the eastern parts of Fujian and Guangdong. In the south China coastal regions, there will be 50 to 150 millimeters of rainfall because of the influence of the tropical circulation system during the last 10 days of July.

9296
CSO: 4007/524

WORK ON CONTROL OF DROUGHT, WATERLOGGING, ALKALIZATION REPORTED

Shanghai WENHUI BAO in Chinese 6 Jul 81 p 1

[Article by Fan Dongsheng [5400 2639 3932]: "Control of Drought, Waterlogging, Alkalization in the Plains of the Yellow River, Huai River and Hai River is Hopeful"]

[Text] Scientific and technical personnel of the Beijing Agricultural University, the Farmland Irrigation Institute of the Chinese Agricultural Sciences Academy and other related units have recently drawn up zoning plans for the comprehensive control of drought, waterlogging and alkalization in the plains of the Yellow River, Huai River and Hai River on the basis of large-scale and multiple disciplinary scientific experiments through efforts of a long period and joint cooperation.

This research is one of the nation's key scientific research projects. This control plan requires less investment, the results are quick, generally the cost can be retrieved within 3-5 years. The natural conditions and the productive conditions of the 6 experimental regions covering a total of 200,000 mu all changed fundamentally after comprehensive control. The results in the experimental regions showed that after saline and alkaline land was improved, it was entirely possible to increase the per mu yield to over 200 jin. Calculating on this scale of increased yields, if all of the 50 million mu of saline and alkaline land are improved, each year, an increase of over 10 billion jin of food grains can be harvested. This figure is equivalent to half of the annual need for commercial food grains by the nation's large and medium-sized cities and industrial and mining regions.

The plains of the Yellow River, Huai River and Hai River span the five provinces of Hebei, Shandong, Henan, Jiangsu, Anhui, and the two cities of Beijing and Tianjin, and the area of cultivated land constitutes over one-fifth of the total area of the nation's cultivated land, and the plains constitute the agricultural region with the largest area of wheat, cotton, peanut, sesame and flue cured tobacco crops. This region's good natural conditions have made it the cradle of the Chinese people. But for a long period, the region's economic development has been seriously threatened by damage due to drought, waterlogging and salinization and alkalization of the soil. Because of the effects of monsoon weather, drought occurs in spring and floods occur in summer here, the ground surface is easily covered with alkaline substances, large expanses of good fields gradually become saline and alkaline wasteland. Human activity contrary to natural patterns has also intensified the expansion of saline and alkaline land. From the middle of the

1950's to the beginning of the 1960's, because of improper guiding of the water of the Yellow River and accumulation of water in the plains, the area of saline soaked land in the three provinces of Hebei, Shandong, and Henan increased drastically to 20 million mu.

In January, 1979, the State Scientific and Technological Commission and the Ministry of Agriculture held a scientific research working congerence on comprehensive control of the plains of the Yellow River, Huai River and Hai River; it proposed demands and made plans. Within a period of over 2 years, scientific and technical personnel of many departments and multiple disciplines of hydrology, geology, pedology, meteorology and water conservancy joined efforts and basically completed the tasks proposed at this meeting. The plan for the specialized region already drafted utilizes the theories of landscaping and ecology to divide the plains of the Yellow River, Huai River and Hai River into 9 first class geographical zones and 59 second class zones, and control plans suited to the local circumstances were proposed according to the different conditions and characteristics of each zone. The control plans point out that landscape and ecological characteristics of the plains of the Yellow River, Huai River, and Hai River are manifested by an associated occurrence of aridity, waterlogging, salinity and alkalinity, forming a mutually connected and mutually limiting organic whole, and drainage must be the basis of control, centered around the exploitation of underground water in the shallow strata combined with a series of comprehensive control measures of banking fertility in the soil and rational planting, before success can be realized.

The results of the 6 experimental zones in Quzhou in Hebei, Yucheng in Shandong, Shangqiu in Henan prove that large-area and highly efficient improvement of saline and alkaline land is practical. The saline and alkaline conditions in the Quzhou area had been recorded as early as the "Book of Han." The Zhangjia Brigade where the scientific research base of the Beijing Agricultural University is located consumed 50,000 to 100,000 jin of returned food grains in past years. Since 1973, when control work began to 1980, the brigade has provided 1.8 million jin of commercial food grains to the state. Although the Wangzhuang Brigade which began control work in 1978 encountered rare drought continuously for 3 years, the total yield of food grains continued to increase. During the 1st year of control, the yield reaches 240,000 jin, the highest level in history. Last year the yield increased to 440,000 jin, Even though this year's rainfall is less than 40 percent of the amount of rainfall in ordinary years, it is estimated that this season's wheat yield will still surpass last year's by over 20 percent. The 140,000 mu of experimental zone in Yucheng in Shangdong underwent comprehensive control in 1974. Now, the danger of drought and waterlogging has been basically eliminated, and the soil fertility has gradually increased. The area of saline and alkaline land dropped from 110,000 mu to 32.000 mu unit yield of food grains increased from about 200 jin before control to 460 jin afterwards. The unit yield of the 12,000 mu central experimental zone reached 650 jin in 1980.

The results of the experimental zones desribed above were awarded at various provincial and national scientific research conferences. The three experimental zones in Hebei, Shangdong and Henan were included in the scientific research project, "man and biological rings," of the United Nations Ecudational, Scientific and Cultural Organization.

9296
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ARTIFICIAL REPLENISHMENT OF UNDERGROUND WATER URGED

Beijing RENMIN RIBAO in Chinese 9 Jun 81 p 3

[Article by Zheng Jingshan [6774 2529 1472]: "Do Not Wait Until There Is a Crisis in Water Sources--Beijing Should Develop Efforts to Artificially Replenish Underground Water in a Big Way"]

[Text] Underground water is a finite resource that must be replenished. Because of the development of productive construction and blind and over exploitation year after year, Beijing City's water sources are deficient, the water level has dropped, the quality of water has become worse, and the situation is becoming more and more serious. We must solve the problem of water sources by opening up sources, conserving the flow and preventing pollution, and at present, we must especially develop artificial replenishment of underground water in a big way.

As urban construction and industrial and agricultural production develop, Beijing City's water sources are deficient, the water level has dropped, the quality of water has become worse and these problems are becoming more and more serious. According to surveys, because of a lack of management personnel, Beijing City's underground water has been excessively and blindly exploited year after year. Each year, the amount of water used surpasses replenishment by 30 percent. Each year, there is a loss of 160 million cubic meters. The hardness and the mineralization of underground water rise each year. Throughout the entire city, four underground funnel regions have already developed and continue to develop. Because of the long period of existence of underground water funnels, partial sinking of the ground surface has already occurred. According to measurements, since 1950, the ground surface of the eastern suburban industrial ward has sunk an average of 20 to 30 centimeters.

The above situation has already affected the people's lives and industrial and agricultural construction. If the situation is not solved it will bring endless disasters.

Solving the problem of water sources must begin by opening up sources, conserving the flow and preventing pollution, it involves a broad scope. This article explores the problem of artificial replenishment of underground water.

Underground water is a finite resource that must be replenished. In the large city where population and industries are highly concentrated and where sufficient river water which can be utilized is lacking, simply relying on nature's periodic replenishment cannot satisfy the need of ever increasing exploitation. For a long period,

to assure stable and reliable exploitation of underground water, the United States, Britain, France, West Germany and the Soviet Union have all developed artificial replenishment in a big way at places where geological conditions are suitable and visible results have been achieved.

Our nation has studied artificial replenishment of underground water for many years and many achievements have been realized. For example, Shanghai established regulations regarding the management of underground water after 1963. Each year, 14 million cubic meters of underground water are exploited, and 17 million cubic meters of water are artificially replenished, thus basically controlling the sinking of the ground surface and controlling the underground water level. The Nangong Reservoir in Hebei used artificial replenishment at a cost of only 20 million yuan to build an underground reservoir of 112 million cubic meters that regulates the amount of water. This not only solved the problem of local water supply, it also assured the amount of water for use in 250,000 mu of cultivated land. The Beijing hydrogeological engineering and geological brigade carried out many experimental studies and made definite progress. In 1976, they directed 560,000 cubic meters of waste water of the Gaojing Power Plant daily into the Yongding River Bed as an experiment in replenishment, raising the water level along the banks of the Yongding River by over 2 meters, slowing down the rate of drop of the underground water level in the Shijingshan area that year, and at the same time, the hardness of underground water was lowered 3 to 5 German hardness [sic], and mineralization by 50 to 100 milligrams/liter.

According to over 100 years of hydrological data, the annual rainfall in the Beijing area is 242 to 1,406 millimeters, the average rainfall over many years is 626 millimeters, and rainfall is concentrated in July and August. The distribution is extremely uneven.

Because rain water cannot be stored, each year about 2.3 billion cubic meters of water are abandoned, about half the total amount of water used by the whole city. If a reservoir can be built at the mouth of the mountain valleys and along the long sandy gravel strips along rivers to stop and store flood water and to use it to replenish underground water, the deficient water source in Beijing city can be alleviated.

For this, we make the following suggestions:

1. We must establish and make sound a water resource management agency, and establish rules concerning the management and protection of water resources. At present, we urgently need to take measures to control the existing wells of industrial and mining enterprises and agencies, we must install water meters and regulate quotas for using water, and levy reasonable water fees. If more water is used, the fees will be increased.

2. Artificial replenishment is not an independent problem. It is closely related to the rational exploitation and utilization of underground and ground surface water. At present, there are many theoretical, technical and technological problems and questions regarding popularization that have to be studied further. Therefore, manpower should be organized to carry out overall geological surveys, studies of artificial replenishment must be expanded, and productive replenishment should be developed.

3. According to Beijing's geological conditions, the policy of "replenishing the west to nurture the east" should be practiced. In the west, flood water and river water should be utilized to replenish underground water to increase its reserve. In the east, the water in the water containing layers that bear pressure should not be exploited or should be exploited less so that the water level and the amount of water can be restored to avoid continued sinking of the ground surface.

4. We must use water to nurture water. Underground water is the same as ground surface water, they are both resources of the state. Reasonable fees must be levied to avoid wastefulness. Especially after replenishment of underground water is launched, it is unreasonable if the beneficiary units do not pay fees. The fees for the use of underground water collected can be used as funds for replenishment work, using water to nurture water.

5. We must strictly limit the use of water for cooling, the use of water for air conditioning and the release of geothermal water. The quality of these types of waste water is good, the quantity is large, and closed circulatory water systems should be built or they should be used for replenishment. We must stipulate that for each well sunk for air conditioning there must be another one for replenishment at the same time, otherwise the well should be prohibited from use and violators should be severely punished.

9296
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SUGAR PRODUCTION REACHES THREE MILLION TONS

Beijing GUANGMING RIBAO in Chinese 19 Jul 81 p 1

[Text] According to information provided by the Ministry of Light Industry, during the sugar producing period from 1980 to 1981, our nation's sugar production again created a new record, total yield reached 3 million tons, an increase of 20 percent over the previous sugar producing period. Among the yield, the total yield of cane sugar was 2.36 million tons, an increase of 10.8 percent over the previous pressing season, the yield of beet sugar was 640,000 tons, an increase of 73 percent over the previous sugar producing period. Our nation's sugar refining industry was affected by the mistaken leftist ideology, and a few years ago, it did not develop rapidly. During the sugar producing period from 1976 to 1977, the nation's production of sugar was only 1.8 million tons. After the Third Plenum of the 11th Party Congress, because a series of policy questions concerning the development of sugar crops was gradually solved, and with the addition of the implementation of agricultural production responsibility systems throughout the broad number of farm villages, the nation's production of sugar gradually increased steadily, during the sugar producing period from 1977 to 1978, the yield surpassed 2 million tons for the first time. During the sugar producing period from 1980 to 1981, it reached 3 million tons.

9296
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LOW TEMPERATURES DAMAGE EARLY DEVELOPMENT OF PADDY RICE

Beijing ZHIWU XUEBAO [ACTA BOTANICA SINICA] in Chinese No 3, May 81 pp 254-256

[Article by Li Rongqian [0448 1369 0578], Zeng Zishen [2582 1311 3947], and Liu Lihua [0491 4539 5478] of the Department of Biology of Wuhan University: "Cytological Studies of the Effects of Low Temperature Upon the Formation and the Development of Microspores of Paddy Rice*"]

[Text] The formation and development of microspores of paddy rice are more sensitive to the effects of environmental conditions. They are especially sensitive to high and low temperatures. This has been frequently reported domestically and abroad.[1-5] This article is a morphological and structural observation of cells during the course of the formation and development of the microspores of paddy rice under natural low-temperature conditions, in order to explore the effects and the mechanisms of the sensitive period to low temperatures.

The paddy rice varieties for testing were "hua ai 15" and "er jiu qing." Under natural low-temperature conditions (the lowest temperature was 12°C to 16°C, while the highest temperature was 21°C to 22°C), the plants were set in FAA [term not further identified] between 9 and 10 o'clock each morning, or set in alcohol: acetic acid (3:1) for 4 to 6 hours and then changed to 70-percent alcohol for storage. Paraffin sections were prepared and stained, using Heidenhain's iron hematoxylin, and parts were made into acetic acid carmine slides. Cytological observations of 331 spikelets were made and contrasted with slides showing the formation and development of microspores of paddy rice under normal conditions. The main results are reported in the following.

During the beginning period of meiosis, especially from the prophase to the metaphase, whole pollen, part of the pollen, or most of the pollen mother cells were aborted. Pollen mother cells stuck together, cytoplasm and nucleoplasm became aggregated masses, some were lumps, some were honeycombed, some were vacuolated, some were granular, some had multiple nucleoli, and some were connected (Photographic plate I, 1, 2, 3). During the period from the middle period of meiosis to the stage of four micronuclei in a microspore, lagging chromosomes and uneven distribution of chromosomes occurred. Some showed uneven and abnormal forms of three and four nuclei such as the T-shaped tetrad (Photographic plate I, 4, 5).

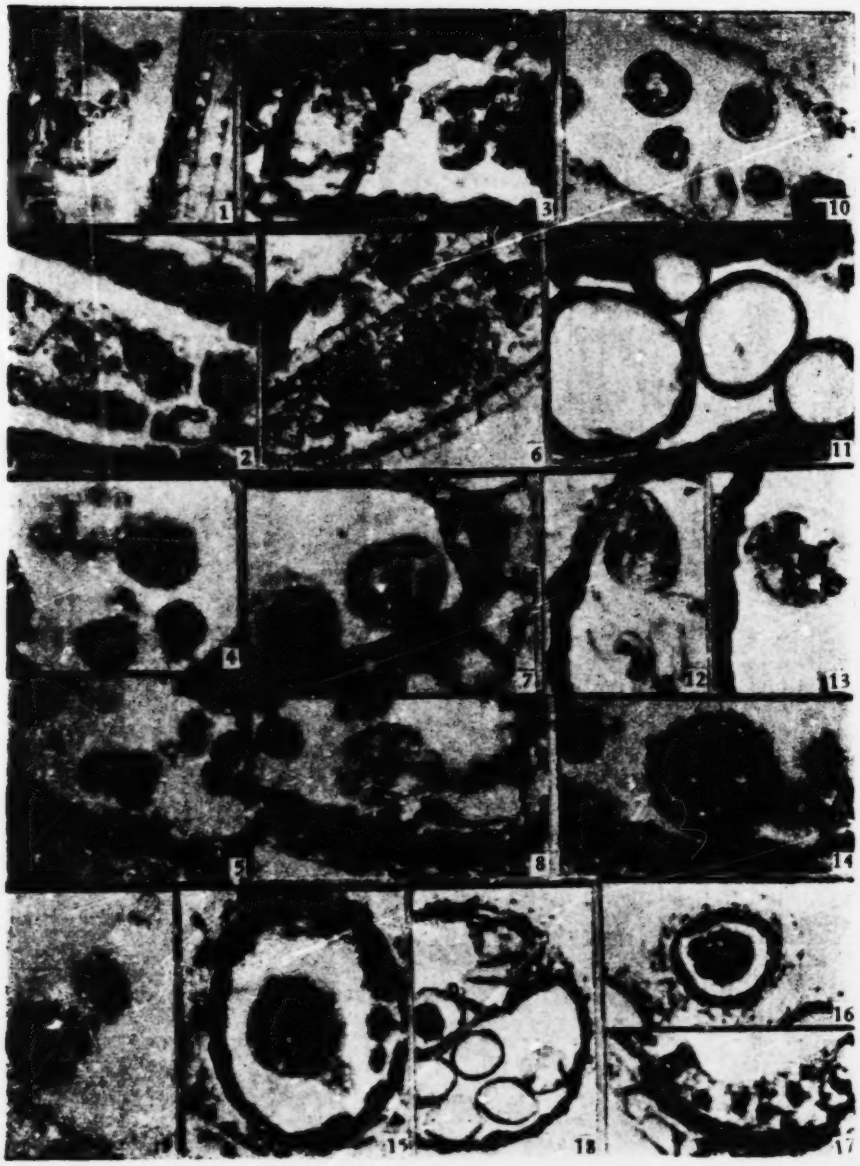
*This article was received in April 1979

When meiosis was about to end, abnormal phenomena of microspores after the tetrad separated were very common. Some showed extranuclear chromatin, while some remained at the triple nuclear stage without the equatorial plate. The membrane wall of some microspores broke and dissolved to form syncytium. There were also a few complete microspores. The cytoplasm of some microspores liquefied and vacuolated, or became wrinkled, shrank, and deformed, or condensed into lumps and plates, or aggregated into masses similar to the separation of the cytoplasmic wall (Photographic plate I, 6, 7, 8, 10). The contents of some microspores penetrated into the pollen sac to form a honeycomb substance. Some formed one or two extremely large nucleoli (Photographic plate I, 9). Some microspores varied greatly in size (megaspore and microspore) (Photographic plate I, 11). The abnormalities of some of the nuclei of microspores were more outstanding, frequently showing two or three micronuclei in one microspore, one large nucleus and two micronuclei, or two micronuclei separating inside a meganucleus (Photographic plate I, 12, 13, 14) or forming tumor-shaped or aggregated multinuclear microspores after many meioses (Photographic plate I, 15, 16). The number of microspores in the anther sac was smaller, and empty anther sacs were frequently seen.

From the results of the above observations, we see that during the course of formation and development of the microspores of paddy rice under natural low-temperature conditions 12°C - 22°C, about 60 percent of the spikelets were affected to various degrees. Abnormalities occurred more during the early period of meiosis from the prophase to the metaphase and the mononuclear pollen stage (60 to 70 percent), and the effects were more serious. The effects led to the abortion of microspores (or pollen), or to the abortion of later pollen. From the anaphase to the four-cell stage during meiosis, the form and the degree of the abnormalities that occurred were not as serious (40 to 50 percent). Thus it can be seen that [during the earlier period the paddy rice] is more sensitive to low temperatures, while later it is more stable.

During the period of formation and development of the microspores, hypertrophy of the tapetum can be seen; two, three and four nuclei are visible in the tapetum cells; some formed a syncytium (Photographic plate I, 17); and sometimes the cytoplasm and the nucleoplasm were fused. Destruction of the hypertrophy of the tapetum could also be seen, and the cytoplasm was scattered throughout the anther sac in a honeycomb fashion. Some cells between two anther sacs had degenerated, decomposed, and dissolved, gradually forming a large anther sac (Photographic plate I, 18). In some of the anther sacs, three vascular bundles occurred on the anther walls (generally there is only one).

Under natural low-temperature conditions (12°C - 22°C), there is a series of abnormal changes in the form and structure of the microspores of paddy rice. These abnormal changes occur more during the period from the beginning of meiosis to the metaphase or the mononuclear stage, and the frequency is higher. The author believes that during these two phases, because of multiple increases in DNA synthesis and synthesis of other materials[2], preparations for cell division have begun, metabolic activity is very active, and therefore the microspores are easily affected by environmental factors (including low temperatures). Low temperatures can change the course of enzymic functions, cause changes in metabolism, and affect the physiology, giving rise to the possibility of morphological and structural changes. Therefore, during the early and beginning period of meiosis and during the microspore period, the formation and development of microspores show more sensitivity to low temperatures.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Explanation of Plate

1. The vacuolated and honeycombed PMCs.
2. Multinucleoli of a PMC.
3. PMCs sticking each other forming a plasmodium.
4. Lagging chromosomes.
5. "T"-Shaped tetrad.
6. Syncytium due to the degradation of the microspore wall.
7. Aggregated masses of cytoplasm and nucleoplasm.
8. The vacuolation of the cytoplasm of a huge microspore.
9. The hypertrophied nucleoli.
10. Various shapes of aggregated cytoplasm and nucleoplasm.
11. Huge and particularly small pollen grains.
12. A large nuclei and two micronuclei in a microspore.
13. Three micronuclei in a microspore.
14. Two micronuclei in a microspore nucleolus.
15. Four micronuclei in a tumour-shaped microspore.
16. Aggregated masses of pollen grains.
17. Hyptertrophy of part of tapetum, showing multinuclei.
18. The fusion of two locules.

REFERENCES

1. Wu Suxuan [0702 4790 5503], Cai Qigui [5591 6386 6311], 1962: The Effects of Environmental Conditions Upon Meiosis of Paddy Rice, ZHIWU XUEBAO [JOURNAL OF BOTANY], 10(1):1-6.

2. Heslop-Harrison, J., 1972: Sexuality of Angiosperms, "Plant Physiology" Vol VII, Aca-emic Press, New York and London, p 183-185, 208-212.

3. Nishiyama, L., 1976: Male Sterility Caused by Cooling Treatment at the Young Microspore Stage in Rice Plants, XIII, XIII, XIV. Proc. Crop. Sci. Soc. Japan, 45(2): 254-262, 270-278, 308-313.

4. Satake, T. and H. Hayase, 1970: Male Sterility Caused by Cooling Treatment at the Young Microspore Stage in Rice Plants, V. Estimation of Pollen Developmental Stage and the Most Sensitive Stage to Coolness. Proc. Crop Sci. Soc. Japan, 39: 468-473.

5. ------, 1974: Male Microspore by Cooling Treatment at the Young Microspore Stage in Rice Plants X, A Secondary Sensitive Stage at the Beginning of Meiosis. Proc. Crop. Sci. Soc. Japan, 43(1): 36-39.

9296
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SHARP INCREASE IN AREA PLANTED TO TOBACCO

Beijing ZHONGGUO CAIMAO BAO [CHINA FINANCE AND TRADE JOURNAL] in Chinese 9 Jun 81 p 1

[Article: "The Area of Flue-Cured Tobacco Planted This Year Shows An Increase of More than 2 Million Mu Over Last Year"]

[Text] This reporter has learned from relevant departments that the decision to increase the procurement price of flue-cured tobacco has effectively mobilized the enthusiasm of the broad tobacco farmers to plant tobacco.

According to preliminary statistics, since the beginning of spring the area of tobacco plants planted by each locality will total over 8 million mu--an increase of more than 2 million mu over the area actually planted last year. The provinces of Henan, Shandong, Yunnan, and Guizhou will increase their planting area over last year's by 25, 18.5, 9, and 33 percent, respectively. The planting areas of other regions producing flue-cured tobacco have also been increased by varying amounts.

The preparatory planting work of each region that produces flue-cured tobacco has been done relatively well. The major concentrated producing regions of Henan and Shandong have prepared large quantities of cake fertilizer in addition to the specific quantities of compound chemical fertilizers supplied by the state. Each locality has tightly grasped the work of cultivating seedlings, the situation with regard to the seedlings is good, and the progress of the transplanting has been rapid. To increase the quality of flue-cured tobacco, each locality has paid general attention to expanding the area of superior seeds, increased the application of phosphrous and potassium fertilizer and controlled the amount of pure nitrogenous fertilizer applied, grasped the rational planting density, and strengthened the training of production and technical personnel.

Each locality also has combined the characteristics of production of flue-cured tobacco and implemented various forms of the production responsibility system. Many production teams in Henan, Shandong, and Guizhou have implemented the measures of unified cultivation of seedlings by the production team, specialized contracts for production, and accounting for salaries in joint production.

9296
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ACHIEVEMENTS OF HYBRID RICE EXPERTS REPORTED

Zhang Xiancheng

Beijing GUANGMING RIBAO in Chinese 23 Jun 81 p 3

[Article by Reporter Gui Tinggong [2710 2185 1562]: "Not Giving Up Unless He Hits the South Wall--A Visit With Zhang Xiancheng [1728 0341 4453] Who Determined the Male Sterile Restorer Line of Paddy Rice"]

[Text] The quiet deputy plant manager of the Guangxi Agricultural College farm sitting before us does not speak much. But his dark face shows he is a pragmatist. Who can imagine that he is the man who has led the paddy rice heterosis utilization research group of the Guangxi Agricultural College, the man who found the male who has made important contributions in making our nation's paddy rice hybridization techniques the foremost in the world, the man Zhang Xiancheng [1728 0341 4453]!

Zhang Xiancheng is 53 years old this year. He is a lecturer at the Guangxi Agricultural College. After graduating from the department of agriculture of the Guangxi Agricultural College in 1954, he remained as teaching assistant and served as assistant to paddy rice specialist Professor Weng Deqi [5040 1795 7871]. Later he became deputy manager of the college's farm. During the "Cultural Revolution," Zhang Xiancheng was criticized as being a "capitalist" and a "reactionary academic authority" and was struggled against. But after being criticized and struggled against, he continued to plant rice and talked about science and technology. "After liberation," Zhang Xiancheng thought: I studied agriculture, seeking new technical ways to cultivate paddy rice for the nation. This is the spiritual responsibility which I cannot abandon. Thus, he began early to explore the utilization of heterosis of paddy rice.

In 1970, a debate emerged in the agricultural science and technology circles concerning the utilization of paddy rice heterosis. Some people regarded utilization of paddy rice heterosis as impossible. Some even predicted that even if hybrid paddy rice is successful, it may not necessarily be superior. Zhang Xiancheng did not regard it this way. He believed that before seeing the way clearly, the world of science and technology is like a maze, yet, when the road is clear, everything will be clear. Selective breeding of the "three lines" of hybrid paddy rice is also the same.

As expected, in 1972, the agricultural scientific and technical personnel in Jiangxi and Hunan successfully bred a batch of male sterile lines and corresponding sterile free lines, but they did not find the restorer lines. Because the "three lines"

were not complete, hybrid paddy rice still could not be used in production. At the national coordination and work conference organized by the Chinese Academy of Agricultural Sciences, some people said: "wild degeneration" and the sterile line bred by hybridization of cultivated rice may be sterile in quality, and it is impossible to find a restorer line. Some people believed there are ten thousand varieties of paddy rice, and to detect a restorer line among them is like finding a needle in the sea. The task is difficult! Zhang Xiancheng saw clearly that to find a restorer line is very difficult. But, he has a personality of "not going back until he hits the south wall." He thought, the heredity of male sterility in paddy rice is mainly a mutual conflict and mutual effect between the cytoplasm of the wild rice and the cell nuclei of the cultivated rice so that the course of development of the pollen is coordinated thus causing sterility. To restore fertility to male sterility, if we select varieties that are relatively close in relation to wild rice and to the ecological conditions and varieties with a relatively coordinated relationship between the cell nuclei and the cytoplasm for test crossing, success may be obtained.

To find the restorer line as quickly as possible and to complete the "three lines" of paddy rice, he worked hard, forgetting sleep and meals. He transplanted seedlings, gathered pollen, drove away sparrows, chased away rats...frequently still working hard in the rice fields long after the lunch bell had sounded. During summer vacation he stayed at the agricultural college to conduct experiments. During winter vacation, he went to Hainan Island to conduct experiments. To conduct tests in crossing and screening and selecting rice varieties, Zhang Xiancheng went to Hainan Island six times, and spent five spring vacations in Yaxian.

Labor and success are not always proportional. In the autumn of 1972, to conduct test crossing and screening and selection for realizing completion of the "three lines," Zhang Xiancheng selectively combined 26 pairs, but he did not find a variety with a good degree of restoration. He found that among these more than 20 varieties, temporate varieties mostly retained sterility, tropical varieties showed restoration. This shows the original hypothesis was correct. Thus, Zhang Xiancheng and the heterosis utilization research group selected 278 Southeast Asian and southern late rice colony varieties from among several hundred paddy rice varieties, and used the international rice 245 and Philippine rice as the key varieties to cultivate five pairs for propagation. Who knows what happened: the assistant, in order to get some air, opened the window and two pairs were eaten up by birds. On the panicles of the remaining three pairs, Zhang Xiancheng discovered a stronger restoring ability! They had large panicles and more grains, heading was uniform, the anthers were full, showing yellow color, and examination under the microscope showed the development of the pollen was normal, pollination and fruiting were also normal. Zhang Xiancheng discovered this was the paddy rice restorer line that he had hoped for day and night.

But, for hybrid paddy rice to show its characteristics, a strongly superior combination must be found and a good variety must be selected. Zhang Xiancheng thought if he could concentrate all superior materials of the whole nation for selective combination, the goal could be realized much more quickly. He led his assistants and came to Hainan Island and joined in the work of selectively breeding strongly combinations. This time they used wild rice and cultivated rice for crossing and completed 555 combinations, 181 combinations which had a restoration of over 80 percent were selected, of these, 55 combinations had a restoration of over 90 percent. They all showed obvious heterosis. For example, of the 13 combinations of the sterile line and international rice 24, the average length of panicles of the

hybrids was 2.2 centimeters longer than the parents, the hybrids had 5.1 more effective panicles, the hybrids had 27.58 grains more per panicle, the fruiting percentage increased by 4.6 percent, the thousand grain weight increased by 2.5 grams, the weight of the single plant increased 14.5 grams, and the increased yield reached 59.6 percent. During the late crop of 1974, they used the above hybrid seeds to evaluate large field production, they planted 6 mu 2 fen of late rice experimental fields, and the yields were sampled and inspected by the delegates to the third national scientific research coordination conference on hybrid paddy rice. The yield converted to 1,200 jin per mu yield, the large field average per mu yield was 1,133 jin. This achievement strengthened the confidence of all the delegates in the popularization of hybrid paddy rice.

Zhang Xiancheng participated in the successful coordinated research of xian type hybrid paddy rice, and recently he was awarded the special award by the State Scientific and Technological Commission and the State Agricultural Commission. At present Zhang Xiancheng is carrying out research of purification and strengthening of the "three lines," pattern of growth and development of hybrid paddy rice and some basic theoretical research. He said, the utilization of heterosis of paddy rice has a broad future. He wants to march towards the goal of better utilization of heterosis of paddy rice!

Yan Longan

Beijing GUANGMING RIBAO in Chinese 23 Jun 81 p 3

[Article by Reporter Zhang Xiuping [1728 4423 1627]: "Success Originates From Hard Exploration--Interviewing Yan Longan Researcher of the Jiangxi Provincial Academy of Agricultural Sciences"]

[Text] On the morning of 8 June, we visited Yan Longan [7346 7893 1344], researcher of the Jiangxi Provincial Academy of Agricultural Sciences and group leader of the heterosis group of the Pingxiang City Agricultural Science Institute who has made outstanding contributions to the cultivation of the stable male sterile line and sterile free line of hybrid rice. This patient and thoughtful middle aged scientific and technological worker just attended the awards conference jointly held by the State Scientific and Technological Commission and the State Agricultural Commission. He excitedly described to us the research in hybrid paddy rice conducted by him and his colleagues.

After Yan Longan graduated from the Jiangxi Agricultural College in 1962, he worked for several years popularizing agricultural technology. In the winter of 1970, the concerned leadership of Pingxiang City handed the topic of hybrid paddy rice research to him. Yan Longan who was only 32 years old felt that this task was very glorious. He accepted immediately. In spring of the second year, he joined intellectual youth Wen Yousheng [2429 0645 3932] who had returned home. They went to Yaxian on Hainan Island to learn the technology of hybridization of paddy rice. They learned from Yuan Longping [5913 7127 1627] and Li Bihu [2621 1801 3275] who were the first to carry out such research and they used the wild degenerate sterile material obtained from their teacher Yuan to explore the cultivation of the sterile line and the sterile free line. After a period of learning and work, they selected seven varieties for hybrid combinations, and began to cultivate the male sterile line of hybrid rice.

On the day they conducted the first hybridization experiment, Yan Longan and Wen Yousheng began from after 0800 that morning and carefully prepared paddy rice spikelets and pollinated them. They forgot hunger and thirst. Their sweat made their shirts all wet, but they continued to struggle for 7 hours and finally completed the crossing of over 300 paddy rice spikelets. After 3 days, not one of the paddy rice spikelets was fertilized. The unexpected failure frightened both of them, yet the discouraging event did not dampen their enthusiasm. They summarized the lesson in time, found the cause and tried to save the situation by working day and night and artificial fertilization finally succeeded. In this way, they used wild degenerate hybrids to obtain 48 precious seeds and recorded data amounting to 100,000 words.

But, is the offspring of crossings of such wild degenerates sterile or fertile? It was still a guess at the time! Yan Longan and Wen Yousheng returned to Pingxiang and reported to the leadership of the city committee and received attention. The city committee leadership decided to transfer 12 scientific and technical personnel and intellectual youths to establish an experimental group to carry out this research, and Yan Longan served as group leader. Their first task was to let these 48 seeds grow as soon as possible. But the institute did not have an electrically powered thermostat to stimulate building. What could be done? The deputy group leader of the experimental group Li Ruguang [2621 3067 1684] asked the old farmers and decided to use the warmth of the human body to stimulate germination. The comrades of the experimental group used sanitized cotton to wrap the seeds tightly and then cloth to wrap them up. The seeds were placed in the inner pockets of Li Ruguang's clothes. One day passed, 2 days passed, 3 days passed...the tip of the embryo emerged. Li Ruguang carefully took care of the seeds. After 7 days and 7 nights, each of the 48 seeds germinated. Later they flowered. The members of the group discovered that these plants were male sterile. They became excited.

Immediately afterwards, the battle to breed wild degenerate sterile lines began. In the spring of 1971, Yan Longan led the comrades of the group to make over 500 combinations on Hainan Island and returned nearly 10,000 seeds. They sowed these seeds and some of the seedlings that grew were like the female parent, some were like the male parent, some were like wild grass, and the entire field looked like a garden of all types of grass. To quickly select and cultivate the sterile line, they decided to go to the seven provinces and regions of Guangxi, Sizhuan and Guangdong to seek teachers. Yan Longan and Li Ruguang went to Guangzhou to seek advice from Professor Zhang who was an expert in paddy rice breeding at the Huanan Agricultural College. They arrived in Guangzhou at the time when Professor Zhang was on leave to Guangxi. They immediately flew to Nanning and immediately learned that Professor Zhang had gone to Kunming. They followed him to Kunming. But at this time, Professor Zhang had already gone to Yunajiang, so they rushed to Yuanjiang. In this way, they travelled 10,000 li and finally found the professor. Under his guidance, they paired the plants and selectively bred ten combinations and greatly reduced the scope of selection.

To breed hybrid rice as soon as possible, the comrades of the experimental group worked hard. Wen Yousheng and others who were physically weaker went into the paddy fields under extreme heat and under the hot sun and worked continuously for 5 to 6 hours. They fainted several times because of heat stroke. After they woke up they continued to work. Although Yan Longan's wife had just given birth, and his mother was old, his heart was still in his work. The experimental group went through five generations and over 1,000 hybrid combinations and finally bred two ideal and stable sterile and sterile free lines in 1972. The sterility of the sterile line was 100 percent.

In 1973, after Guangxi, they also successfully found a restorer line that had a strong combining strength, thus making a full "three lines" and applied hybrid rice in production. Last year, the entire province of Jiangxi popularized over 11 million mu of hybrid paddy rice, and they generally produced an increased yield of 20 to 50 percent over ordinary varieties. The strong and superior combination "Shan you No 2" which they selectively bred was planted throughout Jiangxi Province and was also widely planted in 13 provinces, cities and autonomous regions throughout the nation. Yan Longan and his colleagues have contributed greatly to the coordination of hybrid paddy rice research throughout the nation.

9296
CSO: 4007/497

LATE CROP TECHNIQUES TO RECOUP EARLY CROP LOSSES DISCUSSED

Fuzhou FUJIAN RIBAO in Chinese 18 Jul 81 pp 1, 4

/Article by Correspondent Liu Zhicheng /0491 1807 2052/: "Attend to Late Crop Production to Recoup Early Crop Losses; Provincial Department of Agriculture Invites Agricultural Experts to Talk Over Doing a Good Job on Late Crop Production Problems"/

/Text/ This year Fujian Province's early rice crop was severely damaged by a serious rice blast infestation and by a "May freeze" such as has rarely been seen. How can late crop production be taken in hand to make up for early crop losses? On 11 July, the Provincial Department of Agriculture invited agricultural experts and scientists and technicians from the Provincial Academy of Agricultural Sciences, the Provincial Meteorology Station, and from some municipalities to talk over this problem. Everyone put forward quite a few constructive ideas.

Need to Build Confidence in Triumph Over Disaster

Comrades attending the discussions unanimously believed that as a result of this year's implementation in Fujian Province of various forms of a system of responsibility for production, the enthusiasm for production of the broad masses of peasants has reached an all-time high, and that growth of the early rice crop had been very good. According to meteorological records for Fuzhou, the "May freeze" from 30 May to 6 June was the longest sustained period of cold since 1903, and it severely damaged the early rice crop in the province. In addition, rice blast and flood disasters in some prefectures have resulted in a serious disaster situation for the province. Leadership organizations in all jurisdictions have made a calm analysis and braced themselves to help the masses accurately summarize the lessons of the disasters and to build confidence in triumph over them. Right now is the busy season of two rushes to harvest and to replant, and it is exceedingly important that the opportunity to do a good job of late season production not be lost. The deputy director of the Provincial Rice and Wheat Institute, Li Senhui /2621 2772 1920/, said that a look at early crop production in Fujian Province during the 32 year period since Liberation reveals a tendency, namely that in years of a reduced early crop, the late crop usually showed an increased output and an overall increase in output for the year. This is because following a reduced output from the early crop, cadres and the masses are rather keyed up, and they take very vigorous measures as a result of which they are able to win a bumper harvest from the late crop. Everyone said that this year numerous conditions favor our winning of a bumper harvest from the late crop. First of all, rural villages throughout the province have implemented a system of responsibility for production and the enthusiasm of the peasants for production is very high. Second, since

the smashing of the "gang of four," the province has had increased output from the late crop for 4 consecutive years as all jurisdictions have launched a movement of "the late crop to surpass the early crop," providing rather rich experience in winning bumper harvests from late crops. Third, in most places this year, the early crop ripening period was from 3 to 5 days early, and ripening times was fairly concentrated, and this favors avoidance of cold autumn weather for the double-crop late rice. Fourth, since the province's grain output has shown increases for 4 consecutive years, solid material conditions exist for winning a bumper harvest from the late crop. Everyone felt that we must guide the masses in building confidence in inevitable victory to win a bumper harvest from the late crop.

Take Full Advantage of Late Crop Potential for Increased Output

The seminar conscientiously discussed how to take full advantage of potential for increased output from the late crop. Everyone acknowledged that the key lies in strengthening of leadership at all echelons for late crop production. For a long time the province has tended to emphasize the early crop and slight the late crop. This year this state of affairs has to be turned around. Especially needed is strengthening of leadership in disaster areas. The extent of damage from disasters to the early rice crop varies from place to place throughout the province, so tailored guidance must be given. Support to agriculture by all trades and industries cannot stop at lip-service, but must be translated into action. Urgent attention must be devoted to the struggle against disaster in late crop production. First there can be no contravention of farming seasons in rush harvesting and rush planting to avoid autumn cold. Second is the need to prevent and control blast of rice that may occur over wide areas of the late crop, and endeavoring to take the initiative. Some comrades at a certain level say that the broad masses of commune members exerted a lot of concern and effort in trying to triumph over rice blast for the first crop, but some departments sold the peasants rice blast pesticide that were no longer potent. This positively should not be done. The experts proposed the following concrete actions be taken:

1. For the double-crop late rice, attention must be given to doing things in the right season, to quality, and to maintaining a certain crop area.

In the grain production of Fujian Province, the late crop area and output amounts to more than 60 percent of the total area and total output. Double-crop late rice amounts to more than 60 percent of the late crop. This shows that double-crop late rice offers a very great potential for increased output. During the last 4 years, the increase in output from the double-crop late rice has been 1.8 billion jin, and experience has been mostly in maintenance of the cultivated area and working on yields per unit of area. A look at the experiences of the past several years shows that because they did not do things in the right farming seasons, some mountain regions failed to plant several hundred thousand mu of late crop seedlings each year. This year, if those mountain areas will adopt various measures and plant these late crop seedlings, they will be able to harvest much more grain. Planting of double-crop late rice seedlings must be done pretty much at the proper season. During the past 10 years, annually several hundred thousand mu or even more than 1 million mu of double-crop late rice in the province has not weathered the autumn cold. This year the autumn cold may arrive early, so further careful attention to this problem may be required. In some places where the early crop suffered cold damage, in particular, some plants that had tillered formed panicles, and some commune members were hoping

that unfruited empty glumes might come into milk. They could not bring themselves to plow under the crop and plant the double crop late rice. This is the way to make big losses out of small ones by missing out on the season. Provincial Department of Agriculture agronomist, Liao Changfa /1675 7022 4099/, told of such an event. In 1973, Bingnan County's early rice crop of more than 8,000 mu was freeze damaged, and the fruiting rate was only between 5 and 10 percent. At that time, they recommended plowing under the crop at once and planting the late rice crop. As a result, a harvest from 700 to 800 jin per mu was harvested from the late crop and the losses from the early crop were recouped. Some fields the commune members could not bring themselves to plow under. They waited until after the beginning of autumn /around 7 August/ to harvest, and they got a little more than 100 jin per mu. The result was impairment of the second crop, and losses were even greater. For this reason, the masses must be told, and there can be no great losses as a result of small ones. If the fruiting rate is very low, action should be taken at once to plow under the crop and rush transplant hybrid rice. This year, the hybrid rice area in the late crop covers more than 50 percent of the total area, and the area occupied by "Guichao No 2" is also very large. Generally the quantity of seeds sown on the seedling fields has tended to be large, so seedlings are weak and will require early transplanting. Furthermore, inasmuch as the vegetative growth stage and the effective tillering stage are fairly short for both hybrid rice and for "Guichao No 1," care must begin even before the fields have been fully planted. If time does not permit cultivation between rows to remove weeds, fertilization should be done first. In some places seedling fields are insufficient. If the season permits in such areas, supplemental sowings of daozhong /0227 4467/ varieties should be made, or direct sowing should be done. In some places where seedling leaf blast is serious, leaves may be cut from seedlings and the bare stems transplanted. It is necessary, additionally, to improve quality of transplanted seedlings, and to give attention to shallow and close transplanting. During the late season, temperatures are high and seedlings grow rapidly, so the ground has to be carefully prepared and sufficient base fertilizer put down. Early return to the fields of rice straw should be actively promoted so as to increase the source of organic fertilizer and to be able to plow under the sources of rice blast infection.

2. Intensifying late stage field care of single crop medium to late rice.

This year, Fujian Province's single crop medium to late rice has been increased by more than 200,000 mu, and for 90 percent of it a system of responsibility for production that places responsibility on households or individual workers has been instituted, and plants are doing well. Further intensification of field care during the mid and late season has been done, and increased yields of around 10 percent per mu are possible. Most of the single crop medium to late rice is now in the midst of tillering, and where the jointing stage occurred early, the differentiation of young panicles has already begun. This is a key time for winning a bumper harvest from the single crop rice. First of all, it is necessary to fertilize with panicle fertilizer and flower preservation fertilizer as the appearance of the plants indicate. Most of the single crop rice is distributed in peripheral mountain fields where soil fertility is poor. As a result of insufficient fertilizer during the early stage, some rice seedlings have already begun to turn yellow and lose fertility. Each locale should conduct an examination of its fields and, depending on the conditions of the seedlings, take action during the period of rudimentary panicle differentiation, applying panicle fertilizer depending on the appearance of seedlings to promote differentiation of spikelets, and to get large panicles. At the time of opening during the booting stage, fertilizer should again be applied, depending on the appearance of seedlings, for

maintenance of flowering, and to prevent degeneration of spikelets and increase the fruiting rate. Late stage fertilization should be primarily with phosphate and potash, plus the addition of a suitable amount of nitrogenous fertilizer. Excessive amounts of nitrogenous fertilizer during the late stage is to be guarded against, because it will cause plants to grow wildly but remain in the vegetative stage rather than enter the reproductive stage, and give rise to disease and insect pest infestations. Following panicle formation, fertilization of the leaves should be promoted to extend the functional life of the leaves, thereby increasing the fruiting rate and increasing the per thousand weight of grains. Second is intense examination for prompt prevention and control of diseases and insect pests. During the opening stage and the stage of full heading, in particular, attention should be given to the use of pesticide to protect panicles and to prevent blast of rice at the neck of panicles. At the same time, attention must be given to prevention and control of rice leaf rollers and rice leaf hoppers. Third is intensification of water management. Late rice is fairly sensitive to moisture during the booting stage, the heading stage, and the in the milk stage. Attention must be given to irrigation, guarding against a premature cutting off of water, which might lead to destruction of the roots and premature plant deterioration, and impair coming into milk and fruiting. In mountain fields where water conservancy conditions are fairly poor, in particular, the collection of water and the diversion of water for irrigation following rains should be well done so that drought and a lack of water will not create losses. The period between late July to mid-August is one of high temperatures. During this period, the single crop of rice which is heading and blossoming must be promptly irrigated with running water to lower temperatures so as to prevent high temperatures from causing heat damage, and to help flowering, and fruiting.

3. Diligent attention to early sweet potatoes and active widening of the growing of late sweet potatoes.

Fujian Province has a 3.5 million mu area devoted to early and late crop sweet potatoes. As a result of diseases and insect nests, and drought conditions during the past several years, yields have fluctuated around slightly more than 400 jin per mu. This year, however, as a result of institution of a system of responsibility for production in the province of more than 1.5 million mu of early sweet potatoes, the crop is growing better than last year. Right now, most areas are in the midst of expanding their sweet potato acreage. They must continue to intensify field care during mid and late season, do a good job of cultivating and banking plants with soil, and irrigating to prevent drying out. Early crop sweet potatoes that have been delayed in transplanting and have poorly growing plants should be promptly cultivated and fertilized to prevent "weeds from choking out the sweet potatoes." Small xiang chong /6272 5722/ and leaf chewing insect pests should be promptly prevented or controlled.

The late sweet potato crop area in the province amounts to about 2 million mu. The growing season for the late sweet potato crop is short, and the following must be done in order to win high output: (1) careful preparation of the soil with the addition of sufficient base fertilizer; (2) farming according to the season, doing early transplanting to lengthen the growing season; (3) making sure to do reasonably close planting, transplanting disease-free seedlings, and planting more than 4,000 plants per mu to get a greater number of sweet potatoes; (4) early and meticulous care, beginning to care for the plants even before transplanting has been completed so as to get strong fully grown seedlings and the early production of a sweet potato crop.

4. Major effort at interplanting to expand growing in an effort to get a larger harvest from more plantings.

There should be active promotion of the intercropping of late crop sweet potatoes with autumn soybeans to make full use of autumn fallow land and odd bits and pieces of land for expanded planting of soybeans, autumn corn, and autumn sweet potatoes. Experiences in Jinjiang and Huian prefectures show that from the intercropping of late crop sweet potatoes with autumn soybeans, yields of a few score jin per mu and as much as more than 100 jin per mu may be harvested. Intercropped with peanuts, yields of between 100 and somewhat more than 130 jin may be harvested. Intercropped with gaoliang, somewhat more than 50 jin may be harvested. Were the nearly 2 million mu of late crop sweet potatoes in the province to be interplanted with soybeans or autumn peanuts, gaoliang, or sesame, greatly increased outputs would result.

Serious Attention to Guiding Peasants to Make a Start in Scientific Farming

At the seminar, the experts talked about the major natural disasters that damage late crops in the province, namely the "cold dew wind" and disease and insect pests. Under present circumstances, is there any way we can counter them? They made some representative comparisons, one of which was the "cold dew wind" of 1979, which struck the province earlier than usual. All of Guangze County located in the mountains of northern Fujian escaped damage to its double-crop late rice. The cold dew wind did not hurt it. Conversely, in most of the counties in southern Fujian, the double-crop late rice did not escape, and damage was severe. Secondly, this year, the rice blast in Ninghua County's early rice crop was extremely severe. In some communes, every single production brigade had outbreaks; nevertheless, in such a heavy disaster area, there were no disease outbreaks in the early rice crop of individual brigades. These two events illustrate a principle. If only scientific guidance to the peasants will be intensified and technical measures adopted, these two kinds of natural disasters would not be frightening. What is frightening is our relaxation in the leadership of scientific farming. The Fuzhou Municipal Science Committee deputy director, Huang Baoluo /7806 1405 3157/, has said that when he went to a rural village and asked the secretary of a party branch how they were guiding the peasants in starting scientific farming, the answer he got was: "Following implementation of the system of responsibility, the farmers will be able to farm the fields without you sticking your nose in." The mentality of this branch secretary is representative. In some places, attention to scientific farming has been relaxed. In addition, at some superior variety farms that have been built up through arduous efforts, farm science teams and such organization no longer carry out scientific experiments. This year, following the early rice crop disaster, some people apathetically accepted lessons from the negative side rather than actively engage in scientific farming. Consequently, vigorous strengthening of organizational leadership of scientific farming and the launching of general propaganda to promote scientific farming techniques is necessary. For the past several years, numerous county, commune, and production brigade cadres have worked together with farm technicians to run experimental fields, guidance fields, and speciment fields. Now it seems that use of such methods to promote agricultural techniques is also workable.

Many comrades also talked about the need to resolutely correct "old, outmoded and useless" points of view in guiding peasants to launch scientific farming. Agricultural production cannot be separated from careful care and work to manage water, fertility,

the soil, and seeds. Our numerous experiences are a crystallization of many thousand years of peasant wisdom. In fact, the "old outmoded practices, that some people deprecate, are experiences that long practice has shown to be effective. For example, putting down base fertilizer, close planting, propagation of sturdy seedlings, caring for plants while planting is still going on, etc. are not to be discarded, but should be given attention year in year out. Naturally, as science and technology develop, many new farming techniques will arise in the future. However, unless the most fundamental techniques are done well, there will be no foundation for new techniques.

9432
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GENERALLY GOOD HARVESTS DESPITE DROUGHT IN SHIJIAZHUANG REPORTED

Hong Kong ZHONGGUO XINWEN in Chinese 7 Jul 81 p 3

[Article from Zhongguo Xinwenshe, Shijiazhuang 6 July: "No Signs of Drought in a Drought Year in Shijiazhuang Prefecture, Hebei Province"]

[Text] The fields of Shijiazhuang Prefecture show no signs of drought even though located in the heart of the great drought region of Hebei Province. Recently a national People's Political Consultative Congress inspection team made an inspection here, feeling surprise at seeing the plump wheat grain that was in process of being harvested, the succeding crop of lush green corn growing in the fields, and the trees laden with apples, pears, and peaches in the orchards.

Last year Hebei Province sustained severe disaster from drought, low temperatures, and hot dry winds, and summer grain output in Shijiazhuang Prefectured declined by 430,000 tons, a more than 30 percent decline, in the year of greatest decline in summer grain output since the founding of the People's Republic.

Shijiazhuang in its third consecutive year of drought, this year faces a situation such as has not existed since 1921 when, except for the Hutuo and the Zhi rivers, all of the 84 rivers in the prefecture stopped flowing long before. All the waterways, ditches and ponds along the rail line dried up and their bottoms became visible. As a result of overtapping of underground water, the water table everywhere fell by almost 2 meters, and in some places the dry soil layer was as deep as 1 meter. Drinking water was a serious problem for people and livestock alike.

Today, however, the situation is vastly different. The scene was really gladdening in the communes and production teams in Zhao County and Jin County in suburban Shijiazhuang that members of the People's Political Consultative Conference visited. In Zhao County, the wheat is fully 2 chi high, and the grains are well filled out. The peasants happily harvested and threshed the wheat, production moving along perfectly. They said that the wheatfields here had been watered at least four times, and that yields would run to between 500 and 600 jin per mu. Reportedly the places in the prefecture where harvests were best were Zhengding, Gaocheng, Luan and Wuji counties, where harvests have approached the level of the bumper year, 1979.

Members of the People's Political Consultative Conference also inspected markets in Shijiazhuang and in the county seat of Zhao County. There goods are abundant, and the markets are thriving and flourishing. Foodstuffs in the market not requiring

food coupons are a few fen higher in price than the national list price. The long markets display cucumbers, green peppers, hyacinth beans, dayecai [1129 0673 5475], tomatoes, apricots, and peaches.

That there are no signs of drought in a year of great drought is an accomplishment won by the peasants through arduous drilling of pump wells and diversion of underground water for irrigation. In counties located in plains areas, underground water resources are fairly abundant. Pump wells in the various counties now number 91,000, meaning that fields that receive no rainfall can have water for irrigation, nevertheless.

The fight against drought in mountain areas is much more strenuous. Some counties depended on water carried in buckets slung from shoulder poles for water with which to dibble seeds into the ground and for watering. Some dug up dry riverbeds to build barriers to interdict the underflow, and some dug large mouth wells with an opening of 30 to 40 meters at a great cost in labor.

Why have the people worked so hard? This is because of the role played by various forms of a system of responsibility for production whereby the principle of distribution according to work is honored. In Xingle Commune, Zanhuang County, commune member Shi Wanle's [4258 5502 2867] family has four able-bodied members, who take turns night and day to draw water out of a well using a windlass. In mountain areas, wells are very deep and a lot of work is required to draw water from them, but they are happy to keep at it. Their alloted 6.2 mu of wheatland produced 3,360 jin of wheat, or a yield of 542 jin per mu, when the stipulated yield had been set at 120 jin. Had it not been for the institution of a system of responsibility for production, this would not have been done. His family received an award of 2,000 jin of wheat.

Nevertheless, the situation is by no means one of unalloyed optimism. In the three mountain area counties of Lingshou, Zanhuang, and Xingtang, where the disaster situation is rather severe, state aid is needed.

Careful calculations show that wheat output from Shijiazhuang Prefecture will amount to at least somewhat more than 1 million tons, a 10 percent increase over last year. This has not been easily attained, and has to be called a marvel.

9432
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JIANGDU WATER PROJECT 'IMPROVES WATER CONSERVANCY' IN AREA

Nanjing XINHUA RIBAO in Chinese 28 Jun 81 p 1

[Article: Jiangdu Water Conservancy Hub Project Is Powerful]

[Text] Presently our nation's largest power, drainage and irrigation station—Jiangdu Pumping Station has served considerably in resisting drought and draining floods since its construction began in stages. The Jiangdu Water Conservancy Hub Project built around four large pumping stations is the historical milestone illustrating the firm stand of the Chinese Communist Party to serve the people.

Northern Jiangsu is situated at the lower reaches of the Huai River, the Yi River, Shu River and Si River, known always as the "flood water corridor," and for thousands of years, the people here suffered from floods, waterlogging, drought and accumulation of water. When disaster came, the people had to leave their homes and run from the disasters. After liberation, under the call by Chairman Mao that "we must fix up the Huai River well," our province first began by controlling flood water with fortified dikes, opened flood water channels, and an expanded exit into the sea and into the Changjiang; we carried out the project to block the floods and store water in the Hongze Lake, which preliminarily controlled flood water. Then, with the approval of the State Council, our province began to build the Jiangdu Pumping Station in 1961 to draw the water from the Changjiang to aid Huai River, and at the same time, it provided the plus of draining flood water, draining waterlogging and assuring shipping. After 16 years of efforts, in 1977, the Jiangdu Water Conservancy Hub Project centered around four pumping stations was completely built. From then on, the Changjiang and Haui River joined hands to assure bumper harvests, and the history of agricultural development in the northern Jiangsu region began a new chapter.

The Jiangdu Water Conservancy Hub Project is situated on the northern bank of the Changjiang, above the entrance of the Huai River into the Changjiang, at the confluence of the Jing-Hang Canal and Xintongyang Canal. This glorious engineering structure includes 4 large pumping stations, 1 transformer station, 12 regulatory floodgates, 2 ship passing floodgates, and 2 culverts. Its center is the Jiangdu Pumping Station, with a total installed capacity of 49,800 kilowatts, total pumping capability of 473 flow units. It is first in the nation and one of the foremost ones in the world.

Jiangdu Water Conservancy Hub Project has fundamentally improved the water conservance situation in northern Jiangsu. When the flood water of the Huai River flows rapidly along the waterways into the Changjiang, Wanfu Floodgate, Taiping Floodgate, Jinwan Floodgate are all opened to let the flood water spill into the Changjiang. At other times, the floodgates are closed to maintain the water level of the inner river for navigation and irrigation. In years when the Huai River is dry, water in the Changjiang is drawn into the Jing-Hang Canal via the northern Jiangsu segment north to the gravity flow irrigated area along the canal and along the main ditch and a water source is supplied to the Huaibei region to benefit an area of 3 million mu. In years of internal waterlogging, accumulated water in the Lixiahe region can be drawn and drained into the Changjiang to benefit 4,000 square kilometers in area. Gravity flow can draw the water of the Changjiang to supply water for irrigation in the heartland of Lixiahe and supplement water along the coast for culverts and floodgates to wash away silt and protect harbors and for irrigation of the reclaimed region and for washing away salt. benefiting an area of 7 million mu. When the Huai River has surplus water, it can flow through the Jiangdu No 3 station to generate 3,000 kilowatts of electricity. For example, in the autumn of 1970, rain fell over the Lixiahe region continuously for 40 days, at the time, 3 pumping stations had been completed and the pumps operated continuously for 49 days and drained away the accumulation of water in more than 3 million mu of paddy rice fields in time. The drought of 1978 was as severe as has been seen during the past 100 years. The Jiangdu Pumping Station operated all its generators and this not only assured the irrigation needs of the Lixiahe region, it also delivered nearly 1 billion cubic meters of water to some parts of the Huaibei region for drought resistance via the pumping stations at Huaian and Jinhu.

Since completion of the Jiandgu Pumping Station in stages, it has drawn water from the Changjiang, drained waterlogged water and drawn water from the Changjiang by gravity flow for 18 years with a total of 55.8 billion cubic meters, equivalent to 22 times the body of water in Hongze Lake.

The completion of the Jiangdu Water Conservancy Hub project enabled the Lixiahe region in northern Jiangsu, historically plagued by many disasters, to become our province's important commercial food grain base, the yield of food grains has increased year after year at a rate of 6 percent, 50 percent higher than the average rate of increase of the entire province. The cumulative increase in yield of food grains amounts to 45.1 billion jin.

The completion of the Jiangdu Pumping Station is a song of victory of the policy of hardship, struggle and self-reliance of the Party; it is also a glorious achievement of the cooperative spirit of socialism. It is the first large-scale pumping station designed, built and installed by ourselves in our nation. The planning of the entire project is rational. It is the first to use the siphoning spillway, and at the same time, the vacuum break value is designed as a part of the project. This type of interrupted flow is convenient to manage, operation is safe and reliable and it is now being popularized domestically.

9296
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INDIVIDUAL WHEAT PRODUCTION QUOTAS DISCUSSED

Beijing RENMIN RIBAO in Chinese 16 Jul 81 p 4

/Article: "The Proof of the Wheat Is on the Threshing Ground, Information About the Summer Harvest in Rural Plains Areas of Central Shaanxi"/

/Text/ In early June the correspondent made a visit on foot to a major wheat growing area of China, Babailiqinchuan, where the main emphasis was an examination of the system of responsibility whereby responsibility for wheat production is linked to individual workers. This question has been debated in Shaanxi for more than a year and right up until the time of the wheat harvest, two different views still existed. One view held that now that responsibility for production of crops such as corn and cotton can be linked to individual workers, and since results from pilot projects linking responsibility for production of wheat to individual workers have been very good, this system should be put into general practice. The other view held that wheat, corn, and cotton are different and numerous conflicts exist in linking responsibility for their production, making this system unsuitable for promotion over large areas. The view of the Provincial CCP Committee was that following the summer harvest, experiences should be summarized, the advantages and disadvantages weighed, and a decision made.

The proof of the wheat is on the threshing ground. The correspondent went from Chang'an to Xianyang, to Wugong, to Qianxian, Weinan, and Hancheng. He found that in every place where a system of responsibility had been instituted whereby responsibility for production was assigned to individual workers, the situation was better than expectations. Harvesting was done rapidly, threshing was done cleanly, the sequencing of tasks was good, and the extent of increase in output large. The broad masses of grassroots cadres and masses had already formed a conclusion, namely that assignment of responsibility for wheat production to individual workers was truly good, and the system should be generally practiced on the central plain in Shaanxi.

The Eye-Arresting "Good News in Hancheng"

In the course of his journey, the correspondent saw an investigation report titled, "Great Happy News from Sima Qian's Hometown," which reported great success from the promotion over wide areas in Hancheng County of a system of responsibility for wheat production whereby responsibility was linked to the individual worker. Output from the county's more than 290,000 mu of wheat exceeded 70 million jin, double last year's output, and even 4 percent more than during the great bumper harvest year of 1979.

Last year Shaanxi made the following regulation: Only prefecture level leadership organizations may institute pilot projects whereby responsibility for wheat production is linked to the individual worker; but Hancheng County extended the system over a wide area. During the wheat sowing season, 80 percent of the production teams in this county established a system of responsibility whereby production was linked to the individual worker. At that time, public opinion was in a tumult and the masses had widely divided opinions. People said, "Hancheng has divided up the fields for people to work by themselves!", and "The Hancheng County CCP Committee has committed an area in direction." Letter after accusatory letter reached the Shaanxi Provincial CCP Committee. One after another provincial and prefectural cadres visited Hancheng to make inspections.

Hancheng cadres became alarmed and the peasants were worried. Was it possible that linking responsibility for production of corn and cotton to the individual worker was socialism, but that linking responsibility for production of wheat to the individual worker was capitalism? More than 40 production teams in the county that had just established systems whereby responsibility for wheat production was linked to the individual worker declared the contracts null and void and retreated from them. Faced with all sorts of pressures, the Hancheng County CCP Committee "steadfastly stood its ground." They had the experience of pilot projects in 12 production teams, and the County CCP Committee secretary Liu Qunxiao /0491 5028 2400/ and several members of the Standing Committee walked around all the communes in the county, discussed matters numerous times and came to the unanimous realization that there were no mistakes! They encouraged the commune and production brigade cadres to lead actively and, following the summer harvest, to use the results of practice to make a reply.

At the time when the correspondent reached Hancheng, summer grain procurement quotas had already been overfulfilled ahead of schedule. In both mountain and plains areas, the cadres and the masses said that the system of linking responsibility for wheat production to the workers had rendered a great service in making the wheat harvest so good this year.

This assessment was by no means an exaggeration. Though natural conditions were good for the growing of wheat this year, they were not as good as in 1979. In 1979 when the weather was ideal in every way, the county harvested more than 67 million jin of wheat, only to break that record this year with 70 million jin.

9432
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LIVESTOCK FIGURES GIVEN, LIVESTOCK RAISING SYSTEM OUTLINED

Jinan DAZHONG RIBAO in Chinese 14 Jul 81 p 1

/Article: "Fairly Rapid Development of Province's Livestock Industry During First Half of Year; Establishment and Perfection of System of Responsibility for Production Arouses Both Collective and Individual Initiative"/

/Text/ As a result of the establishment and perfection of a system of responsibility for production, development of Shandong's livestock industry has been fairly rapid during the first half of the year. As of the end of June, there has been steady development in live hogs. Large livestock animals numbered 3,472,000 a 44,500 head increase, or a 1.3 percent increase over the same period last year, for a reversal of a situation of year after year decline over the past 10 years and more in the number of the province's large livestock animals. Sheep numbered 10,547,000 a 580,000 increase over the same period last year, and an increase of 5.9 percent. Rabbits numbered 32,672,000, a 7,565,000 increase over the same period last year in a 29 percent increase. Domestic fowl numbered 99 million, a 10,410,000 increase or an 11.8 percent increase over the same period last year.

In the establishment and perfection of a system of responsibility for production, all jurisdictions have emphasized the summarization of past experiences, and taking into consideration the characteristics of livestock production, have done the following: (1) have adapted general methods to local situations, permitted the co-existence of diverse forms, and have not insisted on arbitrary uniformity; (2) have promoted democracy and respect for the views of the masses; (3) following establishment of a system of responsibility, both parties have signed contracts and guaranteed that they would be honored; (4) constant checking and summarizing for timely discovery of problems and solving of problems, thereby consolidating, perfecting, and improving the system of responsibility. As of the first half of this year, 310,000 of the province's 400,000 basic accounting units in agricultural production, or 76 percent of the total number, had established and perfected a system of responsibility for livestock production. The main forms of these systems of responsibility were as follows: 1. Specialized animal raising. This means that the collective has regularly given livestock to specialized teams or specialized households for feeding in a system of "four fixeds," "three guaranteeds," and "one reward or penalty " The four fixeds are a fixed number of persons, a fixed number of livestock, fixed costs, and fixed remuneration. The "three guaranteeds" means guaranteed fattening to a certain weight, guaranteed reproduction, and guaranteed collection of farmyard manure. By "one reward of penalty" is meant reward for exceeding agreed upon weight, agreed upon reproduction, or agreed upon collection of farmyard manure, and penalty for

underproduction in any of these categories. 2. Specialized contracting with personal responsibility for profits or losses. By this is meant setting a price for a collectively owned draft animal, which is then contracted to a specialized team or specialized household for feeding, the production team providing the needed feed for the animal, and both parties agreeing the specific sum of money to be paid to the production team annually for the use of the animal. Work points are recorded on the basis of the amount of money tendered, all production in excess of quotas reverting to those who contracted use of the animal. 3. Fixing of a value for a collectively owned animal, which is assigned a household, the production team retaining the animal as an asset, but the commune member feeding it and using it and having all rights to it. 4. Specialized households or key point households. By this is meant that subject to the approval of the production brigade and production team, those who do not engage in collective labor, or those who are permitted not to engage in collective production, specialize in the raising of livestock, with both parties agreeing on the amount of money to be tendered to the production team annually. The production team then records equivalent workpoints for labor, and the feeder participates in distributions with any excess earnings reverting entirely to the feeder.

At the present time, all jurisdictions are in process of implementing various policies relating to livestock production to fully arouse both collective and individual initiative so as to raise the meat production rate and the commodity rate of the province's livestock industry in the shortest possible time.

9432
CSO: 4007/536

BRIEFS

NEW VARIETY SOYBEAN--In order to solve the problem of late ripening soybeans delaying the planting of autumn wheat, the Changwei Prefecture Institute of Agriculture in Shandong has bred, after many years of experimentation, an early ripening variety, "Changnong No 3." In fairly large area testing, this variety was shown to have a growing season of only about 35 days, making it suitable for growing with wheat in a system of two crops a year. Yields are around 300 jin per mu, and it has been very much welcomed everywhere. In experiments conducted in the Huang and Huai river basins, the medium ripening variety, "Fengshouhuang," which they cultured, took first place in quantity of output, with outputs of 7.1 to 36.4 percent higher than local varieties, high yield cultivation bringing yields of about 400 jin per mu. This variety has not been introduced to expanded cultivation in 17 provinces and municipalities throughout the country over an area exceeding 1 million mu. [Text] [Hong Kong ZHONGGUO XINWEN in Chinese 7 Jul 81 p 3] 9432

CSO: 4007/529

RURAL ELECTRIFICATION EFFORTS DETAILED

Taiyuan SHANXI RIBAO in Chinese 12 Jul 81 p 1

/Article by Hou Xiangchu /0186 3276 2806/: "Provincial Farm Electricity Departments Support Farms in Doing a Solid Job of Vigorously Increasing Use of Electricity in Agriculture; Support Establishment of System of Responsibility for Agricultural Production and Help Peasants Become Prosperous as Quickly as Possible"/

> /Text/ By way of lending active support to the establishment and perfection of a system of responsibility for agricultural production and assist peasants in becoming prosperous as quickly as possible, while readjusting the national economy, provincial farm electricity departments have done a solid job on four matters to bring about year by year increases in the use of electricity in agriculture. Facts have demonstrated that establishment and perfection of a system of responsibility for agricultural production coincides with gradual agricultural modernization, and the two advance each other. Industrial, transportation, and financial and trade units must give attention to understanding the new circumstances and the new problems once rural villages have instituted diverse forms of a system of responsibility for production, and they should study to determine the new tasks and new measures necessary to support agriculture and to do a good job of lending support to matters that support agriculture. This is to carry out the requirements of the Third Plenary Session of the 11th Party Central Committee in regard to hastening agricultural development, and it is also a requirement for building a modern, socialist, powerful country.

In order to give vigorous support to the establishment of a system of responsibility for production in agriculture, and to help the peasants become prosperous as rapidly as possible, the province's farm electricity departments have given attention, as part of economic readjustment, to improvements in supplying equipment for transmitting and transforming electricity, to safety inspections to get rid of hidden causes of accidents, popularization of knowledge about using electricity, and training of technical forces, so that use of electricity in agriculture will continue to increase. During the first half of this year, farm use of agriculture throughout the province again increased over the same period last year.

In making readjustments, the first task to which farm electricity units in the province have addressed themselves has been installation and improvement of electrical transformers. During the past 2 years, more than 5,500 kilometers of 35,000 volt and 10,000 volt high voltage lines have been added, and within 2 years, rural low voltage lines have increased by more than 15,700 kilometers. Newly added electrical equipment for farm use has increased by 783,000 kilowatts. Within 2 years, electricity has been supplied to an additional 97 people's communes and 1,709 production brigades. At the present time, the province has more than 61,000 kilometers of high tension lines of more than 10,000 volts for farm use, and more than 95 percent of communes and more than 76 percent of production brigades have electricity. Some of the problems occasioned by lack of complete electrical transporting and transformer equipment, and "bottlenecks" in use of electricity have been solved, or are in process of being solved.

The second matter given attention is vigorous improvement and restructuring of rural electric grids. By using a combination of mainly reliance on locally provided funds augmented by supplemental funds invested by the state, some key facilities for transporting and transforming electricity in rural areas has already been renovated or added to, and 880 kilometers of no longer suitable double strands of wire have been replaced with triple strands of wire to carry electricity. Within 2 years, by mostly using funds contributed by themselves and augmented by the state, 1,874 production brigades in the province have carried out a renovation of more than 5,000 kilometers of low voltage lines. Four hundred forty kilometers of wooden power poles were replaced with concrete poles; 125 kilometers of feeder lines that were not up to specifications were replaced; 3,500 kilovolt-ampere power distribution transformers were changed one after another, and major overhauls were conducted on more than 430 transformers. In places where conditions permitted, capacitors needed to reduce power loss and conserve electric power were installed, effectively increasing the safety and reliability of farm use of electricity.

The third matter given attention was conscientious major inspection of equipment safety, bearing the seasonality of agricultural production in mind. In advance of this year's irrigation, the more than 150,000 kilometers of high and low voltage lines, 450,000 household hook-ups, more than 20,000 power distribution buildings, more than 210,000 power plants, and more than 1.2 million pieces of household lighting equipment were inspected line by line, piece of equipment by piece of equipment, and item by item by workers and technicians under the leadership of county electrical bureaus accompanied by members of communes and production brigades. When a hidden danger was uncovered, it was promptly eliminated. Just before the summer harvest, another major inspection was conducted throughout the province, this time the focus being on safe use of electricity on wheat threshing grounds. Propaganda materials were printed and circulated in vigorous dissemination of general knowledge about how to use electricity safely. Electric shock safety devices were also actively promoted. Half of the countries in the province have promoted low voltage underground lines over 3,000 kilometers as a major way of assuring safety.

The fourth matter given attention was the maintenance of training of technical forces for farm electricity. According to incomplete statistics, in 1980, 85 counties (or municipalities) in the province conducted technical training of more than 27,000 rural electric workers. Last year, 100 counties (or municipalities) conducted fairly systematic technical training and technical examination of more than 32,500 rural electrical workers, fundamentally creating conditions for the safe and economical use

of electricity in agriculture. As of the first half of this year, those rural electrical workers already trained or presently undergoing training, and those managing use of electricity numbered more than 13,000. As technical levels of rural electrical workers rise and with the putting into place of machinery for looking after electricity use, management of rurally used electricity is gradually being strengthened.

9432
CSO: 4007/538

PARTY OFFICIAL REPORTS ON AGRICULTURAL DIVERSIFICATION

Chengdu SICHUAN RIBAO in Chinese 15 Jun 81 p 1

[Article: "Comrade Tan Qilong Points Out After Inspection of Southern Sichuan Areas that Developing Diversification Has Strategic Significance"]

[Excerpt] The first secretary of the Sichuan Provincial Committee of the Chinese Communist Party, Tan Qilong [6223 0796 7893] asked the leading cadres of each level throughout the province to recognize fully the strategic significance of developing diversification and concretely strengthen leadership of this work.

Tan Qilong inspected and studied the problem of how to develop diversification when he visited southern Sichuan recently. After he returned to Chengdu, he said at a meeting of the Standing Committee of the Sichuan Provincial Committee that the present situation in the farm villages is good. Some localities and counties which reported a reduced yield of food grains last year actually had increased yields. Some localities and counties that reported increased yields actually had larger increases than reported. The Yibin area reported reduced yields last year, but it actually realized an increased yield of over 100 million jin of food grains. The Neijiang area reported an increased yield of 500 million jin of food grains last year, but actually the increased yield was 700 million jin. This year, the winter food grains and oil bearing crops in these regions again realized large-scale increases in yield. The progress of spring production, the quality and popularization of new techniques are all better, especially since the various types of agricultural production responsibility system have been further implemented, the farmers are enthusiastic and the morale is high. If serious natural disasters do not occur, there are high hopes of producing agricultural bumper harvests this year.

He said, as the food grains of the entire province continue to increase in yield, the food grain rations of the farmers have also increased. The farm villages are undergoing new changes, most farmers have enough to eat because of increased yields and are progressing toward the development of diversification, increasing cash income, gradually advancing from poverty to wealth. We must fully recognize this situation, take forceful measures, insist on implementing the spirit of the documents concerning the development of diversification issued by the Central Committee to hasten the development of diversification.

Tan Qilong emphasized that we must start out from the actual situation in Sichuan and fully recognize the strategic significance of diversification in farm villages. He said, in our nation's agricultural development, there are unfavorable factors

of less cultivated land, a large population, more consumption, and a low labor productive rate but we also have rich natural resources and rich labor resources which are huge advantages. Sichuan is similar, and they are more outstanding. The entire province has 100 million people, there is only nearly 100 million mu of cultivated land but there are 110 million mu of forests, 160 million mu of grassland, about 200 million mu of unclaimed mountains and grassy slopes that are suitable for forestation and grazing. There are over 10 million mu of water surfaces. When we develop agriculture, we cannot see only the 100 million mu of cultivated land. We must look at utilization of all the land, establish the macroagricultural viewpoint in production atructure, establish the comprehensive foods viewpoint in the structure of foods, exert efforts to break through the limitations of the unfavorable factors, fully develop the function of favorable factors, and develop forestry, livestock production, sideline production and fishery on an overall basis. Only in this way can the rich resources be most rationally utilized and a good macroagricultural ecological system be established and the best economic gain be obtained.

Tan Qilong said, developing diversification well is the necessary road to becoming rich in the farm villages. Many years of experience prove that for the farmers to become rich, simply producing food grains will not work, the economy of commercial products must be developed in a big way and establishing diversification well is the key link in developing the economy of commercial products. The 17 Brigade of the Qianjin Commune in Gonglai County is located on flat land, each person averages 1.2 mu of cultivated land. As they grasped food grain production, they also grasped diversification including 22 projects of livestock production and processing of agricultural and sideline products. Last year, the total production value of collective production and family sideline production of the brigade averaged 1,591 yuan per person, actually realizing a per capita average production value of $1,000. Many facts show that for the farm village to become rich, the road of diversification of agriculture, forestry, lievestock production, sideline production and fishery production and comprehensive development of agriculture, industry and commerce must be followed.

9296
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FARMERS SEE SCIENTIFIC TECHNOLOGY AS KEY 'TO IMPROVED YIELD'

Beijing GUANGMING RIBAO in Chinese 6 Jul 81 p 1

[Article: "Agricultural Departments of Each Locality in Sichuan Province Sign Technical Joint Production Contracts With Families and Farmers Contracting Production, the Results Are Visible and Are Welcomed"]

[Text] Since last year, the agricultural departments of each locality of Sichuan Province have greatly improved the level of scientific planting by farmers and promoted the development of agricultural production by signing technical joint production contracts with farming families to contract production to families in farm villages and satisfy the urgent demands of the contracting families and farmers for scientific technology.

The farm villages in Sichuan have in recent years implemented conscientiously the farm village economic policy established by the Central Committee--various forms of the agricultural production responsibility systems have been rapidly established, and a definite proportion of the farm families holding family contracts has been established. These farmers have relied on their physical strength to increase production to the ultimate degree and have clearly seen that further to improve unit yield, one must mainly rely upon scientific technology. They have rushed to wherever training of agricultural technicians and wherever technical field meetings are being held when they hear about them; they listen and frequently the number of farmers "attending" outnumber the official participants. Some have learned technology from each other, many farmers have sought out information about technology, and many farmers have traveled across mountains to "invite technology." Facing this new situation, the agricultural departments of each locality in Sichuan Province took the initiative to sign technical joint production contracts with farmers of families holding contracts for production to send scientific technology to the farmers, and good results have been obtained.

The technical contracts signed by the agricultural departments of each locality in Sichuan and the farmers of families holding contracts for production were mainly of three types. The first type of contracts stipulated that technicians of the departments of agricultural technology sign directly technical joint production contracts with the farmers. The farmers held the contracts and let the technicians "do their job" at the locations of contracted production and unit yield quickly increased further. A technician of the Agricultural Bureau of Peiling County signed a technical joint production contract for production of rape with farmers of 10

families holding contracts for production. He selected superior varieties, went to the fields to carry out field management and did everything scientifically. This year, at harvest time, the average per mu yield of rape seed of 18 mu reached 153.5 jin, a net increase of 93.5 jin over the previous year. The actual cost was 4 yuan less than the contract cost. The farmers of the 10 families also learned the techniques of cultivation using superior varieties and superior methods to create high yields. Everyone was happy.

The second type of contract stipulated that the farmer technicians sign technical joint production contracts with farmers of families holding production contracts. This type of contract is supported and given technical guidance by the county Agricultural Bureau. The Agricultural Bureau first trained a group of farmer technicians, then supported the farmer technicians who signed the contracts. At the same time, the region and the commune also regularly checked on the farmer technicians to see how they had been carrying out their duties and provided material supplies and logistical support. Because technical measures were implemented, and with the close cooperation of the party and administrative departments, the results were generally good. In Fengjie County this year, under the organization of the region and the commune, the Agricultural Bureau trained farmer technicians who signed technical joint production contracts for corn with farmers of 10,000 families holding production contracts in the Xinglong region. Inspection during the middle 10 days of April showed that in the 10,000 mu of corn of these 10,000 families, the plants germinated 10 days earlier than these planted with the old method, and the growth was good. The farmers clearly saw by contrast the power of scientific techniques, and insisted that next year the wheat planting must also be done by signing technical contracts with the farmer technicians. The farmer technicians have changed from being "just another guy" in the past to a "piece of treasure."

The third type of contract stipulated that the agricultural science research units of the locality and the county and the departments of agricultural techniques sign technical service contracts covering family sidelines with farmers of families holding production contracts. Farmers welcomed this method very much. Veterinary hospitals of some communes in Changshou County inoculated chickens to prevent chicken plague and chicken cholera for the farmers of families holding production contracts. The veterinarians inoculated each chicken twice a year and charged only 1 jiao, thus assuring that the chickens would not die of chicken plague within the year. Last year, 24 chickens would not die of chicken plague within the year. Last year, 24 chickens of commune members of 1 family of the Shuanghe Brigade were innoculated, they grew strong and healthily while 160 chickens of farmers of 42 families were not given inoculations and they all died of chicken pest. This year, farmers of 18 brigades all signed technical service contracts with the commune's veterinary stations and all chickens were given inoculations.

9296
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'SEIZING THE TWO FARMING TASKS' BASICALLY COMPLETED

Chengdu SICHUAN RIBAO in Chinese 12 Jun 81 p 1

[Article: "'Seizing Two Farm Tasks' in Our Province's Villages Is Basically Done; Winter Food Grains and Oil Bearing Crops Realize Bumper Harvests, Spring Transplanting Is Timely and Quality Surpasses That of Past Years"]

[Text] Our province's farm villages have basically finished "seizing the two farming tasks." The results of harvesting and threshing of winter crops show that this year's winter food grain and oil bearing crops again realized bumper harvests. Even though the planting area of food grain crops was less than last year's by 2,575,000 mu, the total yield of food grains of the collective still maintained last year's level. The area of rapeseed expanded, unit yield increased, total yield created the highest record in history. Progress of spring transplanting was faster than last year. The quality of transplanting at most localities surpassed past years. According to statistics up to the first 10 days of June, the entire province has already transplanted 42 million mu of early and intermediate rice (1.63 million mu of early rice), the area of superior varieties covered 85 percent, hybrid paddy rice reached 12 million mu. The entire province estimates that this year 45.9 million mu of early and intermediate rice can be planted. The entire province has already sown 23.6 million mu of corn, constituting 98 percent of the planned area for corn at each locality. It is estimated this year it can reach 24.5 million mu, an increase of 500,000 mu over last year. The entire province has already planted about 8 million mu of sweet potato, it is estimated that before June 15th, transplanting will have been basically finished, and the area will approach that of last year. Transplanting of the economic crops of cotton, peanuts, sugarcane, flue cured tobacco and ramie has been finished, and most localities have completed the transplanting plans better.

At present, each locality is further perfecting the production responsibility system, grasping tightly field management of spring crops centered around sidedressing and weeding. Agricultural departments of many localities and counties have assigned large numbers of technical backbone workers to conduct concrete guidance on the first line of production and teach management techniques.

9296
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COTTONFIELD MANAGEMENT MEETING HELD, THREE DEMANDS MADE

Chengdu SICHUAN RIBAO in Chinese 17 Jun 81 p 1

[Article: "Provincial Government Holds Cottonfields Management Meeting, Makes Three Demands Upon Each Cotton Producing Region"]

[Text] Recently, the provincial people's government held a cottonfields management meeting in Xichong County to make three demands upon each cotton producing region:

1. Further strengthen and perfect the cotton production responsibility system. Those production teams that have not yet established a responsibility system that suits the situation of the production team. Production teams that do not have a perfect responsibility system must use various methods to perfect and fulfill the system. The method of personal responsibility for field management and rewards and punishment directly related to yield must be advocated and implemented to establish contracts for the production of cotton, work points and division of investment to the families. At the same time, mutual assistance measures in labor and techniques must be organized to promote a balanced development of cotton production.

2. Scientific planting of cotton should be carried out to teach cotton planting techniques to the families. At present, the technical measures of cottonfield management must be conscientiously implemented, the three key measures reasonable fertilization, prevention of insect pests and timely topping must be well understood The popularization of cotton planting techniques and joint production responsibility systems must be tested by specialized groups and special persons to implement uniform prevention of insects and control of diseases.

3. Understanding must be improved and leadership must be strengthened. The working groups in regional and county cotton production must be strengthened and filled. There must be division of authority. The cadres of each level in cotton production regions must understand cotton production well like understanding food grain production and include cotton production in the review of the work of cadres.

9296
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RICH UNDERGROUND WATER FOUND IN LATERITIC STRATUM REGION

Beijing GUNAGMING RIBAO in Chinese 20 Jul 81 p 1

[Article: "In the Lateritic Stratum Region of Sichuan Which Is Seriously Deficient in Water a Certain Unit of the Capital Construction Engineers Found Underground Water; the Home Village of Comrade Zhu De, Yilong County Seat Now Has Cool Well Water"]

[Text] A certain unit of the capital construction engineers looking for water in the crevasse zone of the lateritic stratum discovered a rich underground water source and contributed towards solving the difficulties of water for local irrigation, industrial production and livelihood of the people in the towns and villages.

The red layer is a type of geostratum consisting of sandy mudstone with a poor water content. The commander of a certain unit of the capital construction engineers and technicians conducted hydrogeological surveys in the Sichuan region and took the task of seeking water in the lateritic stratum region as the goal. In 1977, they drilled a water well which gushed over 15,000 tons of water a day from the synclinal structure in the lateritic stratum region in Nanjiang in northern Sichuan. This lateritic stratum region is rarely seen. To explore new ways and uncover the pattern of richness in water of the lateritic stratum, the capital construction engineers unit conducted large area ground surface surveys and exploration in northern Sichuan, widely inspected the topography, geomorphology and geological structural conditions of the lateritic stratum, analyzed the patterns of concentration of underground water, and discovered that the lateritic stratum at the tectonic crevasse belt under definite geological and geomorphological conditions has a relatively rich source of underground water. On the basis of summarizing the patterns of richness of water in the lateritic crevasse belt, this unit also carried out a large amoung of actual surveys and exploration, repeatedly carried out scientific proof and drilled 155 holes into the crevasse of the lateritic stratum. Over 80 percent had water and 50 percent were high yielding wells that were worth developing.

Yilong County seat in Sichuan is the home of Comrade Zhu De. It is located in the lateritic stratum region. In the past, drinking water was very hard to find. In drought, the entire town's people had to rely on the caravan of carts to go to a place over 100 li away to get water. When he was alive, Comrade Zhu De and responsible comrades of the Sichuan provincial committee mentioned many times that ways should be found to solve the problem of water source in this region. Not long ago,

a certain unit of the capital construction engineers dispatched a squad of hydro-geological survey squad which successfully sank a deep well producing 420 tons of water a day, and the spring water was clean and cool. This has solved the worry of a lack of water for many years for the local people.

9296
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II. PUBLICATIONS

TABLE OF CONTENTS OF 'NONGYE JIXIE' NO 6, 1981

Beijing NONGYE JIXIE [FARM MACHINERY] in Chinese No 6, 1981 p 48

[Text] Is It Advisable to Use a Tractor for Freight Transport?.....Bureau of Agricultural Mechanization, Ministry of Agricultural Machinery (2)

New Developments in Farm Machinery (12 Items)..... (4, 27)

Readers' Companion..... (10)

New Products..... (11)

Setting Commune in Fixed Contact with State Farm to Bring about Rapid Prosperity and Modernization for Commune and Production Brigade..... (16)

Modifications of Harvesting Machines..... (20)

KCL-2 Silicon Controlled Breakerless Magnet..... (24)

A Hundred "Whys" about Tractors..... (26)

A Common Fuel Injection Pump for Both Donghanghong-75 Tractor and Dongfanghong-60 Bulldozer.....Cao Weitian [2580 0251 1131], Design Office, Tractor Plant No 1 (32)

On Maintenance..... (40)

On Repairing and Manufacturing..... (42)

Advertisements

Yufeng Brand Sprayer by Yutian County Agricultural Chemical Machinery Factory, Hebei Province..... (45)

Model Hongqi-700 Thresher by Luancheng County Farm Machinery Factory, Hebei Province..... (46)

Model LMF-500 Flour Mill Set by Zanhuang County Machine Making Factory, Hebei Province..... (46)

High Mortality Parts of Running System of Dongfanghong 75/54 Tractors by Luancheng No 2 Farm Machinery Factory, Hebei Province..... (47)

Horse Head Brand JL-650 Rubber Wheelbarrow by Xingtai Barrow Factory, Hebei Province..... (47)

9717
CSO: 4007/508

NEW COOPERATIVE MOVEMENT INVOLVING SHARE PURCHASES REPORTED UNDERWAY

Hong Kong CHENG MING JIH PAO in Chinese 22 Jul 81 p 1

/Article: "New Cooperative Movement Appears in Rural Henan; Peasants Themselves Organize New Economic Federation; Cooperative Running of Agricultural Byproduct Industries and Operation of Industries and Businesses"/

/Text/ Recently, following the fixing of output quotas on a household basis in the rural villages of Henan, a new trend toward voluntarily called for "cooperative" and "federation" has appeared. This is a new kind of "cooperative movement" different from the "cooperative movement" of some years back.

A report in RENMIN RIBAO has said that in order to expand further production, some peasants in Xinjun voluntarily organized new economic federations. Now the scale of federation is getting larger and larger, the scope broader and broader, and the participating peasant households more and more numerous. According to early April statistics from Zhoukou Prefecture, households participating in federation in the prefecture number 192,948, or 12.17 percent of the total number of households.

One form of organization of the federations is to have three to five commune member households or as many as more than 10 households federate. An overwhelming majority are of this kind. In another form, brigades or production teams federate with a certain number of peasant households, with generally fairly large amounts of funds being invested and collectively owned land being used. The method of investment mostly entails equal buying of shares. In the case of Shouying Brigade, Mengzhai Commune in Lankao County, an investment company was set up and shares sold at 100 yuan per share, one share per person. More than 30,000 yuan was thus accumulated to start up an oil pressing plant, a repair and spare parts sales department, a messhall, and a tobacco and wine commission agent. In other cases, each person invests what he has, that is to say that those who own things (including houses, equipment or land) invest things; those who have funds invest funds; and those who have skills invest skills. This method is used principally in federations between the collective and commune members.

The principal operating methods and scope of these economic federations are: (1) joint buying of farm machines and implements, and livestock; establishment of machine plowing teams, spray irrigation teams, and well sinking teams to develop agricultural production; (2) federation of skilled craftsmen and people with special skills to engage in agricultural byproduct processing industries such as for grain and cotton oil, lumber, and other things; (3) federation to engage in the construction industry or production of building materials.

Methods of distribution in these federations are principally of three kinds: One is distribution on the basis of shares owned; a second is a combination of payment in accordance with work and on the basis of money shares; and a third is distribution in accordance with labor.

9432
CSO: 4007/536

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TITLE: "Research on Early Rice High Yield Technology in Shanghai Suburbs"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 3, 5 Jun 81 pp 1-4

ABSTRACT: Shanghai suburbs have about 1,800,000 mu of early rice acreage. In the 70's, the yield varied between 657-789 jin/mu, averaging 724.1 jin/mu. It was relatively a stable yield but the increase was slow and not even. There were many commune-brigades producing above 800 jin/mu and fields of over 1000 jin/mu yield were not very rare while commune-brigades with 500-600 jin/mu yield were also common. An experiment was carried out, using mainly high yield farm breeds, to establish a high yield culture formula, for the purpose of transforming the low yield elements. Technical analysis of the 16 participants in the experiment in 26 plots revealed that sparse seeding at a proper time to grow strong seedlings to be transplanted at a proper age, adopting a reasonable transplanting density to improve the rate of photo-energy utilization, early application of additional fertilizer, and timely draining of paddy form the essential high yield technique.

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TITLE: "Breeding of the Early Ripening Late Geng 76057"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 3, 5 Jun 81 pp 5-6

ABSTRACT: In recent years, the yield of the late season rice in Shanghai suburbs has been low and unstable, mainly due to the weather. According to the statistical data from 1873 to 1972, when late rice completes heading on 22 Sep, there has been 21 percent of damage by low temperature. For this reason breeding early ripening and low temperature tolerant late rice is an important measure for the region. The new technique of anther culture to produce haploids was employed to produce the 76057 breed. It has been tested for 3 years in the region and the desired result was obtained. It has now been approved for production. This paper reports the process of breeding this variety of early ripening late geng rice.

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TITLE: "Growth and Development Characteristics of Huabei-76057 and Its Application Value"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 3, 5 Jun 81 pp 7-8

ABSTRACT: The Huabei [anther culture] 76057 is a product of the institute, bred out through compound hybridization of xian and geng varieties and anther culture. Regional tests, production demonstrations, and comparative observations of various cultivation factors proved it to have the merits of short growth and development period, early ripening, late transplant tolerance, mild disease susceptibility, retively fast starch filling, high fruiting rate, good rice quality, and high husking rate. In Shanghai suburbs for late season cultivation of medium fertility level, the proper transplant time is the beginning of Aug. Tests in 79 and 80 yielded 19.6 percent higher than Jianong-15, 13.6 percent higher than Huxian-19. When it is transplanted before 10 Aug as the last rice crop, its yield is stable. In 1980, the Liuyu Commune of Yangzhou used it as the late season rice, the yield was 658 jin/mu, as the intermediate rice, the yield was 932 jin/mu, an increase of more than 20 percent over the commune's farm breed Shuangfeng No 4. Merits of Huabei-76057 and essential cultivation techniques are detailed.

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ORG: None

TITLE: "Photo-energy Analysis of Post-wheat Direct Planted Cotton in Shanghai Suburbs and the Banks of Hangzhou Bay"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 3, 5 Jun 81 pp 11-13

ABSTRACT: Shanghai suburbs and the banks of Hangzhou Bay belong to the Changjian Valley cotton region, with basically similar climatic condition and cultivation system. Before the cotton, the crops are the 3-wheat [wheat, barley, and naked barley] and rape. The time-honored tradition is to intercrop cotton in the wheat field. In recent years, there are gradual experimentations of cultivating cotton seedlings to be transplanted after the wheat harvest, or direct seeding of cotton after the wheat harvest. Some believe the yield of the latter system is neither high nor stable, but the results of experiments of recent years have demonstrated that high yield may be obtained if the growth and development principle of post-wheat directly seeded cotton is mastered. Based upon domestic and Japanese survey data, this paper analyzes the effective solar radiation of the various growth and development stages of directly seeded cotton, following the wheat harvest, for photosynthesis of the cotton crop and the utilization rate of photoenergy. It concludes that the effective radiation from the bud-appearing stage to the blooming stage is higher for the directly seeded cotton than the intercropped cotton.

6168
CSO: 4009/422

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TITLE: "Early Mutants From ^{60}Co-γ Irradiated γ_2 and Heritability and Genotypic Correlationship of Its Major Characters in Rice 'Taiyin No 1'"

SOURCE: Beijing YICHUAN [HEREDITAS] in Chinese No 4, Jul 81 pp 22-24

ABSTRACT: Radiation breeding practices have proved that ^{60}Co-γ irradiation is effective for reconstructing the growth and development period and the height of the stalk of rice and the second generation of irradiated plant, γ_2 is the important generation for mutant selection. Irradiation can induce mutation in the ripening time, stalk height, stalk shape, spike type, spike weight, grain type, grain weight, leaf type, leaf color, etc. or the multiple of these. This paper reports an experiment with Taiyin No 1, one of the relatively radiation tolerant breeds. The half lethal dose of its dry seeds may reach 58kR, higher than many other breeds. According to the results of the experiment, early ripening mutants of γ_2 of this breed may be obtained with irradiation of dry seed, wet seed, or germinating seed with ^{60}Co-γ at a rate of 0.63 percent. The test weight, heading time, and stalk height heritability of the early ripening mutants is relatively high, therefore, direct selection for these characteristics may also be feasible. The problem of suitable dosage in radiation breeding of crops is also discussed.

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TITLE: "A Study on Increasing Induction-frequency of Pollen Plants in Maize (Zea mays L.)"

SOURCE: Beijing YICHUAN [HEREDITAS] in Chinese No 4, Jul 81 pp 25-28

ABSTRACT: At present, the problem of low induction rate exists in all attempts of anther culture of maize; therefore, extensive application of pollen plants is rather limited. In 1978, the authors inoculated 51,290 anthers and produced 1,683 calluses, averaging an induction frequency of 3.28 percent. Finally, 345 sprouts evolved; the rate of green sprouts evolving from 100 anthers was, therefore, 0.67 percent. In 1979, as a continuation of the experiment, the callus induction frequency was 8.81 percent, and the sprout evolvement rate was 1.61 percent. Details of the experiment of 1978-79 for the purpose of increasing the induction-frequency of pollen plants of maize are reported, including the media and methods tried.

6248
CSO: 4009/437

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TITLE: "Preliminary Report of Late Geng Natural Dual-purpose Line, Its Selective Breeding, and Its Application"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 7, Jul 81 pp 1-3

ABSTRACT: Selective breeding of Nongken-58 produced a stalk of naturally sterile late geng rice. It has the characteristics of being sterile under the condition of long daylight and high cumulative temperature and being fertile under the condition of short daylight and low cumulative temperature. When it is sterile, it may be used for preparing hybrid seeds; when it is fertile, it may be used to produce seeds. For this reason, it is named as a dual purpose line. This discovery conveniently resolved the problem of preserving the sterile characteristic of naturally sterile geng rice and opened a new way of rice hybridization. At the same time, it also presented a new subject matter in genetic breeding theory. The process of selecting and breeding out this dual-purpose line and its applications in production are reported.

AUTHOR: GUO Yuntao [6751 0061 2711]
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TITLE: "Movement of Nitrogen Fertilizer in Paddies and Research on The Reasonable Technique of Application"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 7, Jul 81 pp 14-18

ABSTRACT: Tests by Nanjing Institute of Pedology indicate that the utilization rate of ammonium sulfate applied on the surface averages 43 percent; 22 percent amounts to the residue and 35 percent is lost. The loss is mainly due to reverse nitrification. The authors used ^{15}N labeled nitrogen fertilizer for 2 years of pot experiment. Results demonstrate that the utilization rate is higher and the loss through evaporation is less when the fertilizer is applied in the entire soil layer, instead of on the surface in several applications.

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TITLE: "Developing Chemical Fertilizer to Promote Grain Production in Jingzhou District"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 7, Jul 81 pp 19-21, 36

ABSTRACT: Since the liberation, through water conservancy construction, the development of leguminous green manure, the extension of high yield superior breeds, and the improvement of cultivation techniques, the grain production of Jingzhou District has been increased 2.38 fold, on the foundation of 31×10^8 jin of 1949. It has now broken the 100×10^8 jin mark. The paper explains the reason for such a success. The experience is essentially the following: (1) Applying chemical fertilizer to increase the unit yield of green manure; (2) applying chemical fertilizer to increase the yield of rape. After pressing to produce oil, from every 120 jin/mu of rapeseeds, 90 plus jin of residue cake is obtained in addition to the large quantity of roots, stems, leaves, and pods, all of which are great nitrogen fertilizer for the grain crop. (3) A proper ratio of phosphorus and potassium is used with the nitrogen fertilizer according to the needs of the soil. (4) Marsh gas and small hydroelectric power plants are being developed to provide new energy source so that all stubbles may be returned to the soil.

6168
CSO: 4009/421

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TITLE: "Some Opinions on the Application of Pesticides"

SOURCE: Tianjin ZHIWU BAOHU [PLANT PROTECTION] No 3, 8 Jun 81 pp 4-6

ABSTRACT: Based on a review of the administration's attachment to the importance of developing the production and application of pesticides in China since 1952, and some statistics that prove the positive effect of pesticides application to crops' yield, the authors discuss some existing problems of pesticide application in China which include: 1) the very unbalanced and excessive applications in eastern, central and southern China, against its very scanty application in southwestern and northern China; 2) the urgent necessity to develop more efficient but low residual pesticides to replace the current high residual 666, DDT, etc. pesticides; and 3) the immediate need to establishing variable

[Continuation of ZHIWU BAOHU No 3, 8 Jun 81 pp 4-6]

pest control indexes against different pests, strengthening of pest forecasting systems, adoption of multiple pesticides rotation application techniques, and improvement of pesticide application techniques.

AUTHOR: LI Fan [2621 5400]

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TITLE: "A Review on the Present Status and Outlook of Pesticide Formulation"

SOURCE: Tianjin ZHIWU BAOHU [PLANT PROTECTION] No 3, 8 Jun 81 pp 7-9

ABSTRACT: The author introduces the formulations, specifications, properties, characteristics and specific applications of some typical forms of pesticides developed and circulated since World War II, that includes: 1) powder formulation; 2) wettable powder formulation; 3) emulsion formulation; 4) granula formulation; 5) flowable formulation; 6) controlled release formulation; and 7) flotation formulation.

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TITLE: "Everyone Should Heed the Problem of Pesticide Residues in Food"

SOURCE: Tianjin ZHIWU BAOHU [PLANT PROTECTION] No 3, 8 Jun 81 pp 14-15

ABSTRACT: Following a discussion on the importance of paying particular attention to pesticide residue in food and fodder, the author stresses the urgency of prohibiting or restricting the use of such high residual pesticides as 666 and DDT, the adoption of low residue pesticides as their replacement, and strengthening of pesticide application management by devoting major effort to implement the First and Second Trial Standards of Safe Pesticide Application promulgated by the Ministry of Agriculture in 1979 and 1980.

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TITLE: "A Preliminary Report on the Control of Wheat Stripe Rust by the Fungicide Bay Meb 6447"

SOURCE: Tianjin ZHIWU BAOHU [PLANT PROTECTION] No 3, 8 Jun 81 pp 18-19

ABSTRACT: Preliminary field experiment on the use of fungicide BayMeb 6447 for the control of wheat stripe rust confirms that the fungicide is 82.1-100% effective when mixed with seeds, 40.18% effective in fields after the first application, and 99.56% effective in fields after the second application. The optimal dosage is 0.03% by weight for seeds, and 20-30 grams per mu for field application. The fungicide used in the experiment was provided by the Isotope Department of the Nankai University and the Shenyang Chemical Engineering Research Institute.

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TITLE: "My Opinion of Extending the Application of Bacillus thuringiensis as a Larvicide"

SOURCE: Tianjin ZHIWU BAOHU [PLANT PROTECTION] No 3, 8 Jun 81 p 39

ABSTRACT: Because of its higher cost, especially in ocmparison with those of such others as DDT, etc., the author suggests a limiting of its applications mainly to vegetables, fruit trees, tea leaves, tobacco, and food crops, where low concentration is still effective, as well as applied in coordination with other cheaper pesticides. To reduce its cost, more extensive study on its identification, selective breeding, renovation of its production process, and other related research are advocated.

11,206
CSO: 4007/389

Veterinary Medicine

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TITLE: "Effect of RBC [Red Blood Cell] on Newcastle Virus HI [Hemagglutination Inhibition] Test"

SOURCE: Nanjing XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE] in Chinese No 3, 20 Jun 81

ABSTRACT: Many factors influence the results of chick Newcastle virus HI test, but the RBC of the terminal indicator is one of the important factors. Aside from the breed, age, and gender, the hemagglutinin sensitivity of different donor chick RBC varies a great deal. This paper reports an experiment, the goal of which is to observe the range of variation of hemagglutinin sensitivity of the RBC of different individuals and to search for a way to overcome this variation. RBC specimens of 20 nonimmune chicks (13 hens and 7 cocks) and 7 specimens from immune hens were used to carry out the test. The range of variation of the nonimmune group was found to be $\log_2^5$ - $\log_2^8$; that of the immune group $\log_2^7$ - $\log_2^8$. Details of the experiment are reported.

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TITLE: "Research on Long Strip Pressurized Thin Film Serum Albumin Electrophoresis"

SOURCE: Nanjing XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE] in Chinese No 3, 20 Jun 81 pp 3-5

ABSTRACT: In serum albumin electrophoresis, a strip of thin film about 8 cm in length is generally used for various test items and appearance of the various protein zones is limited by the size of the film. For the purpose of improving the differentiation, increasing the number of protein zones, films of 2 different lengths are used. Different electrical voltage and duration are applied to the films for comparison. The experiment is carried out in the hope of obtaining clear isolation, high differentiation, and numerous protein zones under the present laboratory condition using routine electrophoresis instrument. Results indicate that under the condition of 280V 60 minutes, with film measuring 12 x 2.5cm, 8-9 clear zones may be obtained.

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TITLE: "Application of Convection Immunoelectrophoresis in The Diagnosis of Swine Toxoplasmosis"

SOURCE: Nanjing XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE] in Chinese No 3, 20 Jun 81 pp 5-8

ABSTRACT: In view of the fact that diagnostic techniques for swine toxoplasmosis introduced here and abroad require specific equipment, are time and labor consuming, or are not sufficiently specific and sensitive, the authors used the technique of repeated freezing of nutrient bodies of toxoplasmos to form antigen, and with the technique of convection immunoelectrophoresis they proceeded with the experiment of examining the serum antibody of pigs of toxoplasmo infestation. Results indicate that after antigen inoculation, a complex precipitate line is visible in positive cases on the 7th to the 174th day.

AUTHOR: WU Junhong [0702 0193 1347]

ORG: Ten Thousand Herd Pig Farm, Zengcheng County, Guangdong Province

TITLE: "The Practice of the '333' Breeding System for Small Scale Industrialized Pig Production"

SOURCE: Nanjing XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE] in Chinese No 3, 20 Jun 81 pp 18-20

ABSTRACT: With the '333' system, 3 times a month, on the 10th, the 20th, and the 30th, all 60-day old piglets are weaned, and the sows taken to a separate sty. On the 3 days of the 5th, 6th, and 7th, all sows are artificially inseminated once on each day. Three times a month on the 5th, 15th, and 25th, the pregnant sows are brought out of the sty and placed in individual pens until birth and breast feeding time. This system of production organization is suitable for small pig farms producing 2000-3000 pigs a year, or larger farms producing ten to one hundred thousand pigs a year. Merits of this system are discussed.

6248
CSO: 4009/425

AUTHOR: LIU Xinhuai [0491 2450 3232]
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ORG: All of Guizhou Provincial Research Institute of Animal Husbandry and Veterinary Science

TITLE: "Experimental Research on Acupuncture and Moxibustion Points for Electrical Acupuncture Effect on Gastroenteric Diseases of Oxen and Goats"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 6, 81 pp 17-22

ABSTRACT: An experiment was carried out to compare physiological functions, including body temperature, respiration, and heart beat of small groups of black and white oxen, yellow oxen, and goats before and after electrical acupuncture in various acupuncture points. Analyses of blood before and after acupuncture were also performed. It is the conclusion of the authors that electrical acupuncture in 4 groups of Baihui and Jiaochao, Baihui and Biyu, Baihui and Guanyuanyu, and Baihui and Housanli can all produce the action of improving peristalsis of the rumen, and of increasing the white cell count of the peripheral blood. Of these point-groups, Baihui and Guanyuanyu produce more uniform and stable effects. None of these points produce any side effect on either oxen or goats.

AUTHOR: None

ORG: Military Horse Hygiene Research Institute, Guangzhou Military District

TITLE: "Research on the Alkaline Supplement Formula for Correction of Acidosis of Horses and Mules and Its Clinical Application"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 6, 81 pp 22-25

ABSTRACT: In acute enteritis of horses and mules, endotoxin blood disease often induces microcirculation impairment to lead to serious metabolic acidosis, and the technique of judging the extent of acidosis and culculating the quantity of alkali to be used to correct the condition is a problem of common occurrence in veterinary medicine. Based upon sodium hydrogen carbonate tolerance tests carried out on healthy horses, and plasma CO_2 binding tests, the authors believe ten times the traditionally administered quantity (intravenous injection of 300-1000ml of 5 percent sodium hydrogen carbonate solution, 1-2 times/day) should be given for effective treatment of acidosis.

AUTHOR: ZHANG Zhenxing [1728 2182 5281]

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TITLE: "Current Quality of Injection Solutions for Animal Use and Quality Analysis"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 6, 81 pp 26-30

ABSTRACT: Medicinal injection solutions for animal use have been extensively developed in recent years. According to a preliminary survey of Heilongjiang Province in 1978, there were 34 producers of veterinary drugs, but only the products of 3 or 4 of these met the quality standard of the State. The problem of quality is similar all over the country, and even more serious in Jiangsu, Liaoning, and Shandong Provinces. In 1976-79, the author took random samples of injection solution products of 23 manufacturers of 10 provinces (cities) to inspect their quality and found 2/3 of the products to be less than standard quality. The author was happy to report that 100 percent of such products manufactured in Shanghai met the quality standard. About 97.1 percent of the disqualified products cannot meet the standard for transparency. Factors contributing to the inferior quality of these products are analyzed.

6248
CSO: 4009/427

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TITLE: "The Action of Fibrinolytic Principle Obtained from the Venom of Agkistrodon halys (Pallas) on the Blood Coagulation System"

SOURCE: Kunming DONGWUXUE YANJIU [ZOOLOGICAL RESEARCH] in Chinese No 1, Feb 81 pp 33-40

TEXT OF ENGLISH ABSTRACT: The fibrinolytic principle was obtained by DEAE-Sephadex A-50 column chromatography and Sephadex G-100 gel filtration from the venom of Agkistrodon halys Pallas. The experiment, both in vitro and in vivo, suggests that the fibrinolytic principle acts on fibrin and fibrinogen and is able to hydrolyze factor VIII and factor V. The properties of the fibrinolytic principle of Agkistrodon halys Pallas venom are similar to those of plasmin; therefore, it is a plasmin-like substance.

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TITLE: "The Action of Anticoagulant Principles Obtained from the Venom of Agkistrodon halys (Pallas) on the Blood Coagulation System"

SOURCE: Kunming DONGWUXUE YANJIU [ZOOLOGICAL RESEARCH] in Chinese No 1, Feb 81 pp 41-47

TEXT OF ENGLISH ABSTRACT: An anticoagulant principle was obtained from the venom of Agkistrodon halys produced in Zhejiang Province by means of DEAE-Sephadex A-50 and CM-Sephadex C-25 colum chromatography. The effect of the principle on blood coagulation both in vitro and in vivo was studied. In vitro, it prolonged remarkably plasma recalcification time and one-stage plasma prothrombin time, but did not prolong thrombin time and did not dissolve fibrin. It could inhibit formation

of blood thromboplastin and tissue thromboplastin even at low concentrations. In a rabbit, through intravenous injection, the principle caused a marked and transient prolongation of whole blood coagulation time, plasma recalcification time, one-stage plasma prothrombin time and thrombin time, and decreased suddenly in the rabbit fibrinogen level below 22 percent at 10 minutes after injection, but the Ac-globulin dissolution time was not shortened.

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END

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AGRICULTURE

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CONTENTS

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I. GENERAL INFORMATION

Fujian

Increase in Amount of Single Crop Rice Growing
(Dong Diwei; FUJIAN RIBAO, 4 Jul 81) 1

Current Policies Lead To Improve Incomes for Peasants
(Zheng Yizheng; FUJIAN RIBAO, 12 Jun 81) 2

Tips Provided for Control of Rice Blast
(Zheng Jin; FUJIAN RIBAO, 6 Jul 81) 5

Provincial Rapeseed Production Achieves High Level
(FUJIAN RIBAO, 9 Jun 81) 7

Liberalized Policy, Responsibility System
Procurement Plan Overfulfilled

Raising of Long Haired Rabbits Urged
(FUJIAN RIBAO, 6 Jul 81) 9

Briefs
County Summer Grain 11
Agricultural Production 11
Fujian Soybean Production 11

Guangdong

Disaster Relief in Dongguan County Following Torrential Rains Reported
(Feng Zhang; NANFANG RIBAO, 20 Jul 81) 12

Briefs
Pork, Beef Price Adjustments 14

Guizhou

Briefs
County Economic Diversification 15

Heilongjiang

Briefs
Cash Crops in Heilongjiang 16
Price of Beef Cattle Up 16
Heihe Prefecture Wheat 16

Hubei

Revival of Flagging Hybrid Rice Impetus Discussed
(HUBEI NONGYE KEXUE, Jul 81) 17

Early Ripening Varieties of Ambari Hemp Hybridized
(Huang Hongjun; HUBEI RIBAO, 6 Jul 81) 19

Briefs
Grain Production 20

Jiangsu

Briefs
Early 21
Cotton Harvest 21
County Maize 21
Silkworm Cocoon Production 21
Peanut Area Expanded 21

Jiangxi

Briefs
County Late Rice 22
Early Rice 22

Nei Monggol

Briefs
Xilin Gol League Livestock 23

Ningxia

Briefs
Grain Output 24

Shandong

Protein Enhancement of Stems Fed Livestock Explained
(DAZHONG RIBAO, 11 Jul 81) 25

Qualified Success in Tissue Culturing of Chinese Catalpa Reported
(DAZHONG RIBAO, 11 Jul 81) 26

Shanghai

Cotton's Light Energy Needs in Shanghai-Hangzhou Bay Area Detailed
(Pang Zhenchao; SHANGHAI NONGYE KEJI, 5 Jun 81) 27

Two New Hybrid Rice Varieties Characterized
(SHANGHAI NONGYE KEJI, 5 Jun 81) 33

Shanxi

Appeal Made for Increased Dryland Farming
(Fei Duhong; SHANXI NONGYE KEXUE, Jun 81) 36

Zhejiang

Zhejiang Province Marks Progress in Extensive Electrified Water Pumping
(Zhao Yu; ZHEJIANG RIBAO, 4 Jul 81) 39

Briefs
Profit Targets 41
Early Rice 41

II. PUBLICATIONS

Table of Contents of 'LINYE KEXUE' No 2, 1981 42

Table of Contents of 'ZHONGGUO XUMU ZAZHI' No 2, 1981 44

Table of Contents of 'TURANG TONGBAO' No 2, 1981 46

Table of Contents of 'SENGONG KEJI TONGXUN' Nos 2-3, 1981 48

Table of Contents of 'LINYE KEJI TONGXUN' Nos 2-3, 1981 50

ABSTRACTS

AGRICULTURAL ECONOMICS

NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] No 7, 1981 53

METEOROLOGY

QIXING [METEOROLOGICAL MONTHLY] No 7, 10 Jul 81 56

MICROBIOLOGY

WEISHENGWU XUEBAO [ACTA MICROBIOLOGICA SINICA] No 2, 1981 59

VETERINARY SCIENCES

SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] No 7, 1981 61

I. GENERAL INFORMATION

INCREASE IN AMOUNT OF SINGLE CROP RICE GROWING

Fuzhou FUJIAN RIBAO in Chinese 4 Jul 81 p 1

[Article by Dong Diwei [5516 1593 0251], Provincial Department of Agriculture: "Single Crop Rice Expanded Over 190,000 Mu in Province; Adherence to Principle of Adapting General Methods to Local Situations in Spread of Superior Hybrid Varieties"]

[Text] Everywhere throughout the province this year there has been adherence to the principle of adaptation of general methods to local situations for the expansion of the single rice crop growing area. Statistics from provincial agricultural departments show plantings of mid-season and late season rice on 3.67 million mu in the province, 190,000 mu more than last year.

In the single rice crop growing prefectures of Jianyang and Longyan, emphasis has been given this year to single crop rice production as a major link in increasing grain output. Since April, the Provincial Department of Agriculture and some prefectures and counties that produce a lot of single crop rice have held single crop rice production conferences one after another in an effort to tap potential for increased output from the single crop of rice, and to raise yields per unit of area. Promotion of superior varieties has been a major action taken everywhere. According to statistics, the province already grows 1.83 million mu of hybrid rice, which is half the single rice crop area. During the past 2 years, Yongfu Commune in Zhangping County, located in the mountains at more than 700 meters above sea level, has gradually revived its single crop of rice, which had earlier been turned into two crops of rice. Last year, its grain production increased by more than 4.23 million jin, and most ricefields produced in a single crop an output greater than that of the former two crops. In order to increase per unit yields, this year the commune has launched a "Competition for the Very Best in Mid-Season Rice" movement, and a fine picture in production has appeared.

At the present time, everywhere in the province attention is being given to improved field care of single crops of mid-season and late rice, particular emphasis being given scientific fertilization and the eradication of disease and insect pests to win a bumper harvest from the single crop of rice.

9432
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CURRENT POLICIES LEAD TO IMPROVED INCOMES FOR PEASANTS

Fuzhou FUJIAN RIBAO in Chinese 12 Jun 81 p 1

[Article by Zheng Yizheng [6774 5030 2973] of the provincial agricultural committee: "Liberating Ideology, Liberalizing Policy, Suiting Measures to Local Circumstances, Developing Superiority; A Group of Rich Brigades and Production Teams Emerge in Our Province's Farm Villages"]

[Text] According to the most recent statistics compiled by the provincial agricultural committee, in 1980 there were 48 brigades and 285 production teams with an average personal income (distributed by the collective) of over 300 yuan in our province's farm villages, an increase of 5 to 12 times over the 8 brigades and 21 production teams in 1979. Among them, 5 brigades and 39 production teams had a per capita average distributed income of over 500 yuan. The per capita average distributed income of the Huiyao Brigade of Zhongcun Commune in Sanming city, was 580 yuan, and the per capita distributed income of the Xiaolangkeng production team of Erdu Brigade, Shuibei Commune, Shaowu County, was 1,202 yuan.

These rich brigades and production teams are distributed in the suburbs of Fuzhou city, in Huancheng Ward, in food-grain producing regions of each locality, in forest regions, fishery regions and centralized regions with economic crops. The emergence of these rich brigades and teams is the result of firmly implementing the policy, guidelines and principles of the Third Plenum by each locality: liberating ideology, liberalizing policy, suiting measures to local circumstances, developing superiority, and revitalizing the farm village economy. The characteristics are as follows:

First, a production responsibility system was instituted and established soundly. In particular, the joint production responsibility system fully mobilized the enthusiasm of the commune members to carry out collective production well. For example, the Liming Brigade of Hongshan Commune, Huancheng Ward in Fuzhou city produced mainly vegetables, and industrial and sideline production were relatively developed. Last year, this brigade implemented specialized production, and especially after specialized teams and groups implemented the joint production accounting responsibility system, commune members exerted efforts to increase the production of superior quality vegetables and found many ways to expand outlets for industrial and sideline industries; a new situation of "four increases" emerged, i.e., increase in yield, in contribution, in income, and in distribution. The per capita average income was 318 yuan and the savings of commune members reached over 215,000 yuan. The Commune members happily said: While in the past, the policies

established at the beginning of the year changed color at the end of the year, the tasks were not completed and bonuses were sought to supplement expenditures, now the policies do what is promised, the indicators are realized, the collective is happy, and the commune members are rich.

Second, measures were suited to local circumstances and crop distribution was rationally readjusted according to the perrequisite of assuring increases in the total yield of food grains. Brigades and production teams mainly engaged in agricultural planting exerted efforts to develop many types of economic crops--oil-bearing crops, tea, fruits and peanuts--and realized double bumper harvests of food grains and economic crops while undertaking food grain production in accordance with production habits, labor forces, soil quality and technical conditions under the guidance of national plans. Caiban Brigade of Jiuhu Commune, Longhai County, paid attention to doing a good job of food grain production, and last year the per-mu yield of food grains reached 2,083 jin. It also paid attention to developing the superiority of planting narcissus: during the past 2 years, without affecting the production of food grains, 200 mu of land were readjusted for planting narcissus and a responsibility system was implemented. The income from narcissus reached over 600,000 yuan, or 74 percent of the income of the entire brigade, and the income per person was 446 yuan.

Third, measures were suited to local circumstances, the superiority of manpower resources and natural resources was fully developed, and diversification was carried out. The Tongmu Brigade of Xingcun Commune, Zongan County, in recent years fully developed the natural superiority of the locality and insisted on planting tea as the main crop and the policy of combining tea planting and agriculture. The production of tea developed greatly, the collective economy became richer and richer, and the income of commune members became higher and higher. Last year, the entire brigade realized over 350,000 yuan in income from tea, or 56.4 percent of the total income, an increase of 40 percent over the previous year. An increase of 90 yuan in income per person was realized from tea alone. The distributed income per person of the entire birgade was 404 yuan, an increase of 155 yuan over 1979. Now the personal savings of the entire brigade has reached over 250,000 yuan, an average of 1,225 yuan per family.

Fourth, business management was done well and efforts were exerted to reduce production cost. Last year, the Jiaoting Brigade of Wuyi Commune, Zongan County, produced high yields, the cost of production was low, the contribution was great, and the income was large. The average income per person of the entire brigade was 308 yuan. This brigade paid attention to economic accounting while increasing production of food grains and increasing income and paid attention to economic results. It undertook to increase income, on the one hand, and to cut expenditures, on the other. It undertook scientific fertilization, conserved the use of seeds and held down production expenses, and it paid a lot of attention to management and use of farm machinery. Accounting was carried out for each of the 30 tractor units of the entire brigade, the responsibility was assigned to individuals, and noticeable results were achieved. In repair costs of farm machinery alone, a reduction of 6,600 yuan was realized. The cost of each dan of rice grains was only 3 yuan 6 jiao 2 fen--lower than other brigades.

Fifth, a leading team was established whose ideology was liberated, that understood management and was skilled in management. Woman secretary Huang Suhua [7806 4790 5478] of the party branch of Huiyao Brigade, Sanming city, was skilled in business

management. She talked with the masses and selected several people who had policy making ability, a skill in economics, and production experience to serve as the leading team for the birgades and the production teams. Their thinking was relatively liberated; they conscientiously implemented the series of policies, principles and guidelines since the Third Plenum; they respected the autonomy of the production teams and the wishes of the masses; they suited measures to local circumstances; and they implemented the joint production responsibility system. Last year, the average income per person of this brigade was 580 yuan.

At present, although the number of brigades and production teams with an average income per person of over 300 yuan is not large, the significance is profound and the experience is precious. The experience not only showed us the bright future of a wide number of farm villages, but at the same time it vividly and forcefully showed that the party principles, guideline and policy since the Third Plenum are completely correct. They can fully develop the superiority of the socialist collective economy.

9296
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TIPS PROVIDED FOR CONTROL OF RICE BLAST

Fuzhou FUJIAN RIBAO in Chinese 6 Jul 81 p 1

[Article by Zheng Jin [6774 6930], Plant Protection Department, Provincial Department of Agriculture: "Eradicate Sources of Disease Germs to Guard Against Blast in Late Rice Crop"]

> [Text] Editor's Note: Rice blast has already caused serious damage to the early crop in some places this year. We must learn a lesson and take active measures to guard against outbreaks of rice blast in the late crop and in future years. This article deals with ways to eradicate sources of rice blast disease germs now.

Rice blast is a disease caused by the invasion of rice blast disease fungi. The sphores of these disease germs can float around in the air, and use wind and rain as carriers to spread to the leaves, panicles, nodes, and seeds of paddy rice. When these spores obtain suitable temperatures (24° - 28° C) and sufficient humidity (above 90 percent), they sprout and invade the plants, requiring only 6 to 8 hours at the fastest to invade the body of a rice plant, absorbing large amounts of the rice's nutrients and moisture, and propagating themselves. Within 4 or 5 days following invasion, speckles appear on the invaded part, a new generation of spores is produced, and the cycle begins again with repeated dissemination and continuous infection.

Following harvest of rice that has been invaded by disease germs, the disease germs remain dormant in the rice straw and among the grains. Under dry conditions these disease germs can survive until the growing season 2 years later, and the survival rate is even longer for those fungus hypha that lie dormant in the tissues. When the right conditions of temperature and humidity come along, they can steadily produce spores, becoming the main sources of disease germs for the first outbreak of disease in rice.

This year rice blast is serious in the province's early crop, and though the reasons are numerous, the fundamental reasons are the weakness in resistance to disease of the varieties and the steady accumulation of sources of germs. Therefore, thorough eradication of germ sources constitutes a major link in comprehensive prevention and control measures for rice blast. The principal methods are as follows:

1. Handling of diseased rice straw. Infected rice straw is the main source of disease, and it must be thoroughly cleansed. Specific ways to clean it are as follows. 1. When rice straw is returned to the fields, the rice blast germs on the infected straw can live only a very short time in the paddyfield water and soil. Research reports say that the survival time for germs in paddyfield water is from 3 to 4 days only. If infected straw is buried in the soil 1 to 3 cun deep, the disease germs will die in about a day or so and be unable to transmit disease any more. Therefore, at the time the rice is harvested, diseased fields must be noted, and after the harvest, the rice straw from diseased fields should be promptly returned to the fields, the straw being returned to the fields even while the harvest is underway, watered and plowed under (or rolled under with a spiked wooden roller) so that it is all buried in the soil. This method both puts an end to the source of infection and also promotes full rotting of the rice straw as well as increased fertility. It deserves to be vigorously promoted. 2. All places using rice straw for fuel should pile infected straw separately, and then burn it, rather than strew it around. 3. Rice straw kept for use as cattle feed should be selected from fields that have not had the disease, and this straw should not be placed together with infected straw. Additionally, use of diseased straw to build sheds, to cover rice seeds to promote germination, or to tie bundles of seedlings preparatory to transplanting should be prohibited.

2. Disinfection of seeds. Disease germs on seeds are one of the sources of disease germs for rice blast on seedlings. Diseased seeds should be disinfected before being sown. Seeds from elsewhere should be strictly disinfected before sowing.

Inasmuch as there are presently no especially efficacious pesticides for use in disinfecting seeds, 4,000 parts of 80 percent solution of "402" anti-fungus solution should be used to soak the seeds for 48 hours. Alternatively, 1 part in 50 of formalin may be used to soak the seeds for 3 hours. Otherwise, seeds may be soaked in cold and hot water baths, the seeds being soaked first in cold water for from 6 to24 hours after which they are soaked in a 55°C hot bath for 5 minutes. All of these methods are very effective. Seeds that have been immersed in a pesticide must be washed with clear water before planting so as not to impair sprouting.

9432
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PROVINCIAL RAPESEED PRODUCTION ACHIEVES HIGH LEVEL

Liberalized Policy, Responsibility System

Fuzhou FUJIAN RIBAO in Chinese 9 Jun 81 p 1

[Article combining reports received from Ye Jinchai [5509 6855 5865] et al of the provincial agricultural department: "Because of Liberalized Policy and Implementation of Many Forms of Responsibility System, Our Province's Rapeseed Production Increased 45 Percent and the Area of Planting Rape, the Unit Yield of Rapeseed and the Total Yield All Reach the Highest Levels in History"]

[Text] This year, our province realized a large-scale increase in rapeseed on the foundation of 4 consecutive years of increased yields. According to statistics of the provincial agricultural department, this year the value of the entire province's total yield of rapeseed is estimated at over 59 million jin, over 18 million jin more than last year or an increase of 45 percent, the highest level since liberation.

According to analysis by the agricultural department, this year's bumper harvest of rapeseed was mainly the result of a liberalization and stabilization of policy and the implementation of many forms of responsibility system, along with good weather since last winter which benefitted the growth of rape; this resulted in increasing the enthusiasm of the broad masses of commune members for planting rape. In the past, due to the influence of the "leftist" ideology, many localities unilaterally emphasized the planting of wheat, not allowing the communes and brigades to plant more rape and not allowing commune members to plant rape individually. After the Party's Third Plenum, the masses of cadres of many counties, communes and brigades liberated their ideology, broke away from the confines of the "leftist" ideology, respected the autonomy of the production teams, and suited measures to local circumstances in developing rape production; thus rapeseed increased in yield for 2 consecutive years. Last July, the provincial committee and the provincial government conscientiously summarized the experience of increased production of rape of the past 2 years, decided to further liberalize policy, and encouraged the collective and the commune members to suit measures to local circumstances and to plant more rape. After the task of sales to the state was completed, the surplus rapeseed was given back to the commune members for their own consumption. The current rapeseed procurement policy has been stabilized and not changed. The broad ranks of commune members boldly and calmly planted rape in a big way in accordance with the spirit of the documents of the provincial committee, bringing about the welcome scene of "three increases" in the production of rape this year. First, there was an increase in area. This

year, the area of planting throughout the province reached 780,000 mu, an increase of 12 percent over last year and the highest level in history. The area of planting in the Jinjiang, Putian, Longxi regions increased about 50 percent over last year. The area of planting in Minqing, Zhangpu, Putian, Changtai counties expanded over onefold. Second, the unit yield of rapeseed increased. The average unit yield throughout the province increased 20 percent over last year. The per mu yield of Longhai County reached 120 jin, an increase of 64 percent over last year. Third, there was an increase in total yield. The total yield of the entire province is estimated to have increased 45 percent over last year. The total yield of Longxi region increased 1.3 times, and the total yield of Jinjiang region increased 90 percent.

Our province has been deficient in oil. The people in towns and villages have always had a short supply of edible oil. Now, bumper harvests of rapeseed have continued for 4 years, and especially with this year's large bumper harvest, this shortage has been alleviated. Many counties originally deficient in oil have basically become sufficient in oil. In many localities, communes, brigades or individuals which are "becoming rich by planting rape" have emerged. This year the six brigades in Luofang Commune, Liancheng County, received an income of 73 yuan per person from rape alone. Last winter commune member Lan Xinghui [5663 5281 6540] of the Xinshang Brigade, Guanzhuang Commune, Shanghang County, planted over 2 mu of rape, and this spring he harvested over 520 jin of rapeseeds; besides keeping 150 jin of rapeseeds for pressing oil for self-consumption, he sold over 370 jin to the state and received an income of over 180 yuan.

At present, commune members of each locality are happily selling rapeseed and rape to the state.

Procurement Plan Overfulfilled

Fuzhou FUJIAN RIBAO in Chinese 9 Jun 81 p 1

[Article by the reporting group of the provincial oil and tallow company: "Rapeseed Procurement Plan for the Whole Province Is Overfulfilled"]

[Text] According to statistics of the provincial food grains department by the end of May the entire province had procured over 15 million jin of rapeseed, completing this year's procurement plan for rapeseed with a surplus of 33 percent, an increase of 60 percent over the same period last year. After this spring's bumper harvest of rapeseed, the food grain department conscientiously implemented the policy of procurement of rapeseed and fulfilled the promise of higher prices as encouragement for surplus procurement; the enthusiasm of the broad ranks of commune members to sell rapeseed to the state was very high, and the quality of the rapeseed sold to the state was higher than that of last year. Large increases were recorded in yields in the regions of Longxi, Putian, and Jinjiang. The rapeseed sold to the state by commune members surpassed the planned procurement by onefold to eightfold.

Commune members of the rapeseed-producing regions this year produced higher yields, sold more rapeseed and also kept more oil. Recently, the price of edible oil in the agricultural markets at each locality had dropped. In some regions the price dropped by over 10 percent. At present, the cities and regions of Ningde, Sanming and Xiamen are striving to overfulfill the procurement task, while the farmers in other regions are continuing to sell surplus oil to the state.

9296
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RAISING OF LONG HAIRED RABBITS URGED

Fuzhou FUJIAN RIBAO in Chinese 6 Jul 81 p 1

[Article: More than 100,000 Long Haired Rabbits in Fuding, Pinghe, and Shouning Counties; Number Raised Less Than 1,000 in 19 Counties; Provincial Agriculture and Foreign Trade Departments, Womens' Association, and Supply and Marketing Departments Convene Conference on Long Haired Rabbits; Call for a Good Job in Departmental Coordination and Active Support for Development of Long Haired Rabbits"]

[Text] The Provincial Department of Agriculture, the Provincial Bureau of Foreign Trade, the Provincial Womens' Association, and the Provincial Supply and Marketing Administration recently held a joint meeting in Fuzhou on production of long haired rabbits. Its purpose was the exchange and promotion of advanced experiences for the development of long haired rabbits. It called upon pertinent grassroots level units to intensify coordination and cooperation in an effort to develop more long haired rabbits.

Production of long haired rabbits is a feeding industry in Fujian Province with very good prospects for development. Since these four units held a joint on-site meeting for the first time in Fuding County during June last year, a great increase has taken place in the number of long haired rabbits being raised. Conference statistics show that during the first half of last year, the number of long haired rabbits being raised in the province totaled 1.08 million, but the number has increased to its present 1.38 million. As of the end of April, 112,000 jin of rabbit hair had already been purchased by the state. This amounts to a 54 percent increase over the same period last year.

The conference recognized that experiences during the past year in developing long haired rabbit production show that given active leadership, stable policies, and vigorous measures, long haired rabbits can develop very rapidly. The current problem is a need for every department to effect close coordination and do a good job of cooperation. The three counties of Fuding, Pinghe, and Shouning, which are now growing more than 100,000 long haired rabbits, as well as other advanced counties, agricultural, foreign trade, supply and marketing units, and womens' associations have done a large amount of work. Agricultural departments and womens' associations have organized mobilization of commune members to raise rabbits, and have coordinated with foreign trade departments to promote advanced techniques in raising rabbits. While doing a good job in purchases of long haired

rabbits, foreign trade and supply and marketing departments have introduced large numbers of rabbit varieties, have distributed young rabbits, and have trained personnel to guide the raising of rabbits. In some counties, measures for support have been more flexible and diversified. In Fuding County, for example, while diligently carrying out provincially stipulated purchase price and award sales policies, methods such as protected prices and exclusive selling rights for superior varieties of young rabbits have been instituted. Key households that have raised more than 20 rabbits to adulthood, that have produced more than 10 jin of rabbit fur a year, and that have produced more than 100 young rabbits a year have been given recognition and material rewards. In order to give support to the raising of rabbits by new households, during the past year special interest-free loans of a half year's duration have been issued, and low priced rabbit cages provided. Now in the farflung rural areas of Fuding county has appeared a mass rabbit-raising movement with "three generations in the same house," "cadres taking the lead in raising," "raising by friends and relatives to relieve poverty," "women taking rabbits to raise after getting married," and the raising of rabbits by bachelors and households enjoying the five guarantees [children and infirm old persons who are guaranteed food, clothing, medical care, housing, and burial expenses by the people's commune]. The number of long haired rabbits raised in county total more than 240,000. The conference noted that the flourishing growth of long haired rabbit production in Fuding, Pinghe, and Shouning counties was not achieved by the work of one or two departments, but rather an accomplishment of all relevant departments and active coordination among the broad masses of commune members. The conference called upon them to summarize experiences, strengthen coordination, and expand accomplishments. It called for areas where development has been relatively slow to diligently study and spread the experiences in cooperation of departments that have done a good job, to clarify their own work responsibilities, and to actively arouse and support the broad masses of rural commune members to raise long haired rabbits.

A great imbalance currently exists in the production of long haired rabbits in Fujian Province as a result of different degrees of serious attention given in different places by the leadership mentality, and the differences in positiveness and activeness of relevant units' work. There is a great potential to be tapped. The delegates from various places who attended this conference have reported that of the 69 counties and municipalities in the province, those growing more than 10,000 long haired rabbits number 22 (three counties having more than 100,000 rabbits), and 19 counties have less than 1,000. Some counties have virtually none. In places where development has taken place rapidly, the disparity between one commune and another and one brigade and another is also very great. The conference asked that all jurisdictions give attention to two matters. First is the opening up of new areas for an expansion of rabbit raising. First of all, it is necessary to arouse the enthusiasm of pertinent departments in each of these places to get them to undertake the launching of and support to development of long haired rabbit production. Second is active promotion of advanced raising techniques in advanced areas, carrying out of improvements in species, and increasing the quantity and quality of rabbit hair.

9432
CSO: 4007/531

BRIEFS

COUNTY SUMMER GRAIN--By 15 August, Fuqing County, Fujian, had procured some 43 million jin of summer grain, overfulfilling its procurement target by 900,000 jin. [OW240042 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 23 Aug 81]

AGRICULTURAL PRODUCTION--Gutian County, Fujian, encourages peasants to develop a diversified economy while paying attention to grain production. The county's 180,000 mu of double-crop early rice this year suffered from frost and plant diseases, resulting in lower output. To make up for the loss, the county expanded the acreage of double-crop late rice by nearly 20,000 mu, strengthened field management on 230,000 mu of single-crop rice and expanded the acreage of other grain crops by 12,000 mu. At the same time the county encourages commune members to grow mushrooms, edible fungus and tremella raise rabbits and so forth. [OW232154 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 21 Aug 81]

FUJIAN SOYBEAN PRODUCTION--As of 3 August, Jingjiang Prefecture in Fujian had sold 7 million jin of soybean to the state, overfulfilling this year's procurement quota by 240,000 jin and exceeding that of the same period for last year by 1.08 million jin. This year the prefecture planted a total of 170,000 mu of spring soybean. [OW232154 Fuzhou FUJIAN RIBAO in Chinese 14 Aug 81 page not given]

CSO: 4007/556

DISASTER RELIEF IN DONGGUAN COUNTY FOLLOWING TORRENTIAL RAINS REPORTED

Guangzhou NANFANG RIBAO in Chinese 20 Jul 81 p 1

[Article by Feng Zhang [7458 4545]: "Powered By the Spirit of the Sixth Plenary Session of the 11th Party Central Committee, Bumper Late Crop Harvest Is Won. Following a Particularly Bad Torrential Rain, Dongguan Actively Launches Rescue Work"]

[Excerpts] Following a particularly bad torrential rain, the vast numbers of cadres and masses of Dongguan County, powered by the spirit of the Sixth Plenary Session, actively launched rescue efforts to restore production and recoup early crop losses from the late crop.

Between 5 pm on 29 June and 5 pm on 1 July, a torrential rain and a severe torrential rain fell on Dongguan County. Within 2 days, some places had 769.3 millimeters of rainfall or more, those getting rather less still receiving more than 200 millimeters. The maximum amount of rainfall in the cities and towns of the county was 73.1 millimeter per hour, an extremely rare occurrence. Inasmuch as this severe torrential rain came suddenly and violently, even though each jurisdiction did a great amount of rush rescue work, great damage was nevertheless sustained. Of the counties, more than 690,000 mu of early rice, 269,000 mu was innundated for a loss of 600,000 dan of paddy. More than 26,900 mu of late crop rice seedlings were also innundated for a loss of more than 20,000 paddy. Other crops such as peanuts, sugarcane, jute, lichees, and pondfish were also severely damaged. In addition 32 bridges were washed away, and six small mountain pools were destroyed. One hundred fifty-four houses collapsed, and 916 firewood sheds, pig and cattle pens, and other structures collapsed. County losses exceeded 30 million yuan.

Following the disaster, the County CCP Committee established rescue leadership teams sending out 24 teams to investigate the situation in 16 disaster-stricken communes and to organize post-disaster production. At the same time, the County CCP Committee also aroused units concerned to assemble a supply of cement, chemical fertilizer, lumber, diesel fuel, gasoline and such goods, plus disaster funds using the expedients of transfers, cutbacks, warehouse inventory, and borrowing in advance to make rapid deliveries to disaster-stricken communes and brigades. At an enlarged session of the County CCP Committee held from 7 to 10 June, the situation was analyzed and specific actions taken for late crop production to recoup losses.

Within 10 days, the county repaired 96 mountain pools, reservoirs, embankments, and bridges, and was in process of repairing 74 more. Also repaired was 8,337 meters of drainage and irrigation ditches. The county has rush harvested 500,000 mu of early crop rice amounting to 70 percent of the early rice crop area. Following check and authentication, the county has to resow 4,500 mu of late crop seedlings, and has already resown 4,285 mu.

In addition, all jurisdictions are devoting great attention to the restoration and restocking of fishponds. The county has arranged for supply of 8.4 million fry from elsewhere, and has transferred 8 million from within the county for timely replenishment of the ponds.

9432
CSO: 4007/531

BRIEFS

PORK, BEEF PRICE ADJUSTMENTS--Following approval by provincial and municipal units concerned, Guangzhou will begin today (20 July) an adjustment of retail list prices for pork of different quality, and of the sale price of pork and beef purchased at negotiated prices. This is in adjustment to changes in consumption habits of the masses. While maintaining unchanged overall retail list price levels for pork, every effort will be made to supply more lean meat, and to do more about the adoption of measures for increases and decreases in the price of different categories of pork (meaning separate sales of fat and lean meat). Following price readjustments, the price for lean meat will rise from the former 1.45 yuan per shijin to 1.65 yuan. Spareribs will increase from 1.03 yuan per shijin to 1.25 yuan. Lard will decrease from 1.22 yuan per shijin to 1 yuan. Fat meat will decrease from 1 yuan per shijin to 0.85 yuan. Commensurate readjustments will be made in the price of various processed pork products. Additionally, the retail price for choice meat purchased at a negotiated price will rise from the former 1.65 yuan per jin to 1.85 yuan. Partial commensurate readjustments will be made in other kinds of negotiated price frozen pork on the basis of the comparative price paid for different qualities of choice meat and prices in the area where the meat was produced. The retail price of fresh beef procured at negotiated price will rise from 2.15 yuan per shijin to 2.70 yuan. Units concerned have also stipulated that these are the highest retail price limits for various kinds of pork and beef, and that downward fluctuations are permitted. [Text] [Guangzhou NANFANG RIBAO in Chinese 20 July 81 p 1] 9432

CSO: 4007/531

BRIEFS

COUNTY ECONOMIC DIVERSIFICATION--Guiyang, 17 Aug (XINHUA)--Yuqing County, Guizhou, has been developing a diversified economy while paying attention to grain production. In 1980, the county's total grain output increased by 16 percent over 1979, and its output value from sideline production and economic diversification increased by 9.4 percent in the same period. The county produced more than 15 million jin of rapeseed this year, an increase of 93.7 percent over 1980, which was itself a record year. In the past year or so the county planted 2.06 million lacquer trees, bringing the county's total number of lacquer trees to more than 4 million, averaging more than 90 per household. [OW240107 Beijing Xinhua Domestic Service in Chinese 0148 GMT 17 Aug 81]

CSO: 4007/556

BRIEFS

CASH CROPS IN HEILONGJIANG--The area planted to sugarbeets, flax, sunflower, tobacco and other cash crops in Heilongjiang this year is 15.6 percent larger than last year's. All these crops are growing well. Twenty four counties have been designated as sugarbeet bases, growing a total of 3.58 million mu of sugarbeets. To improve the quality of tobacco, 26 counties have become tobacco bases with a total tobacco area about twice as large as last year's. [Harbin HEILONGJIANG RIBAO in Chinese 18 Jul 81 p 1]

PRICE OF BEEF CATTLE UP--With the approval of the Provincial Government, a circular was recently issued jointly by the provincial Price Bureau and Foreign Trade Bureau of Heilongjiang, stating that beginning 1 August, the beef cattle procurement price paid by the state would be raised once again by an average of 7 cents [0.07 yuan] per jin of gross weight. The circular further stipulated that following the rise in the procurement price, the market price of beef would not be changed. [Harbin HEILONGJIANG RIBAO in Chinese 18 Jul 81 p 1]

HEIHE PREFECTURE WHEAT--Wheat growers in Heihe Prefecture of Heilongjiang are adopting flood-combating measures prior to wheat harvesting, which usually takes place during a rainy season. Statistics showed that the annual loss of wheat due to waterlogging in past years was about 10 percent of the total annual output. For 1980 the loss was as high as 100 million jin. The wheat area in this prefecture this year accounts for 57 percent of the total grain-soybean area, and the number of harvest combines that are in good working condition and are ready for the wheat harvest number 1900 this year, a 51-percent increase over 1980. [Harbin HEILONGJIANG RIBAO in Chinese 21 Jul 81 p 1]

CSO: 4007/555

REVIVAL OF FLAGGING HYBRID RICE IMPETUS DISCUSSED

Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 7, Jul 81 Rear Cover

[Article: "Provincial Hybrid Rice Conference Convened at Wuchang"]

[Text] From 12 to 16 May, the Provincial People's Government held a provincial hybrid conference at Wuchang. A total of 109 delegates from all prefectures and municipalities, comrades in charge of agriculture in 46 counties, farm bureau chiefs, delegates from provincial departments, schools, and news units, and experts and professors attended the conference. The conference was hosted by Yang Chunting, [2799 2504 0080], deputy director of the Provincial Agricultural Commission, Liang Jiurang [2733 0036 6245], director of the Provincial Academy of Agricultural Sciences, and Zhao Chengwu [6392 2110 2976], deputy director of the Provincial Bureau of Agriculture. Provincial CCP Committee Secretary Huang Zhizhen [7806 4249 4176], and Deputy Provincial Governor Wang Hanzhang [3769 3362 3361] made important speeches at the conference. The conference studied relevant documents, heard representative statements from several delegates, listened to the scientific and technical reports of experts and professors, and conducted enthusiastic discussions bearing on real issues.

Discussions at the conference acknowledged that hybrid rice possesses remarkable hybrid heteroses, and that adaptation of general methods to local situations for steady development of hybrid rice can bring about greatly increased rice output. Since hybrid rice was first promoted in cultivation over wide areas of Hubei Province in 1976, it has been grown on an accumulated 10.33 million mu in five years, and has produced a total of more than 1.16 billion jin of paddy for yields averaging increases of 113 jin per mu. The conference unanimously acknowledged that among improvements in paddy rice varieties, hybrid rice represented a major breakthrough following the short stem rices of the 1960's, and that development of hybrid rice is a major way for Hubei Province to increase grain output.

The hybrid rice areas of Hubei Province developed very rapidly during the first several years, rising from 300,000 mu in 1976 to 4.57 million mu in 1978. In 1978, however, as a result of damage done by drought and high temperatures, output from hybrid mid season rice was less than from conventional mid season rice, and subsequently the hybrid rice area gradually declined until by 1980, it had dropped to 1.2 million mu. The conference acknowledged that there were many reasons for this state of affairs. Subjectively, the main reasons were inadequate understanding of the characteristics of hybrid rice and its advantages. Understanding

of its disadvantages was particularly incomplete. Sufficient understanding was also lacking about how to make the most of its advantages and what key links needed to be mastered for growing it under the natural conditions prevailing in Hubei Province. Consequently, in propaganda much emphasis was given to its advantages, but little to the conditions that had to be made ready for it. Insufficient emphasis was given to adaptation of general methods to local situations and a rational crop pattern. When output declined and the hybrid area decreased, prompt and vigorous action was not taken.

Finally, after summarizing the lessons of experience and improving understanding, the conference raised requirements and measures for future development of hybrid rice in Hubei Province. Delegates to the conference unanimously agreed that hybrid rice in Hubei Province must develop in accordance with a program of "active step by step adaptation of general methods to local situations." If hybrid rice is to be developed, several key links must be taken in hand, leadership strengthened, and a common understanding reached. There has to be parent pair propagation and seed production areas to do a good job of seed preparations. Technical mainstay cadres have to be trained so as to be able to master all the techniques involved in hybrid rice. Pertinent policies have to be resolved; subsidization of expenses for parent pair propagation and seed production has to be instituted as does revolving grain quotas and special use of chemical fertilizers.

9432
CSO: 4007/543

EARLY RIPENING VARIETIES OF AMBARI HEMP HYBRIDIZED

Wuhan HUBEI RIBAO in Chinese 6 Jul 81 p 2

[Article by Huang Hongjun [7806 4767 6511]: "Provincial Academy of Agricultural Sciences Breeds Two New Varieties of Ambari Hemp To Create Conditions For Ambari Hemp Production"]

[Text] The Cotton Institute of the Provincial Academy of Agricultural Sciences has bred new varieties of ambari hemp suited to climatic conditions in Hubei Province, namely "6014" and "6004."

Ambari hemp production has developed rapidly in the province in recent years, the area planted to it amounting to more than 200,000 mu. In 1980, output totaled more than 600,000 dan (a record), permitting not only self-sufficiency but the export last year of more than 8 million gunny sacks. The major problem in amberi hemp production in Hubei Province has been varieties suited to climatic conditions in the province. Because they were not suited to climatic conditions in the province, varieties introduced from Guangdong, Guangxi, and Fujian provinces would not fruit, requiring the province to bring in from elsewhere more than 1 million jin of ambari hemp seeds annually, an expenditure of more than 1.5 million yuan being required for this purpose alone. Solution to the problem of self-sufficiency in ambari hemp seeds was an urgent task for the development of ambari hemp production in the province. In view of this situation, the Cotton Institute of the Provincial Academy of Agricultural Sciences began an appraisal of introduced varieties in 1978, systematically selecting and hybridizing varieties, finally breeding medium ripening ambari hemp varieties "6014" and "6004", which produce a high output of fiber and are able to fruit when grown in Hubei Province, thereby creating conditions for further development of the province's ambari hemp production.

"6014" and "6004" were test planted in Zaoyang, Mianyang, Qianjiang, Jianli, and Shishou counties where they made a fine showing, producing greater average yields than comparable variety "Qingpi No 3." "6014" produced average yields of 426 jin per mu, and "6004" averaged yields of 409.5 jin per mu. These two strains can produce an average of about 100 jin per mu of seeds.

Sown in late April or early May, "6014" and "6004" may be harvested between late October and mid-November, the time of harvesting being about one month earlier than for "Qingpi No 3," thus occasioning no delay in sowing of winter crops and making them suitable for vigorous promotion in Hubei Province.

9432
CSO: 4007/539

BRIEFS

GRAIN PRODUCTION--The annual grain production target for Hubei this year is 37-38 billion jin. To reach this goal, great efforts in field management of intermediate and late rice crops are essential. Due to persistent droughts earlier this year, the areas sown to early and intermediate rice were somewhat reduced; and, therefore, the production outcome of the double-cropping late rice crop will be an important factor for reaching the annual grain production target. In the past, double-cropping late rice was planted in some localities that were not suited to this crop. Following several years of readjustment, the current area planted to this crop has been reduced to 13.7 million mu. [Wuhan HUBEI RIBAO in Chinese 20 Jul 81 p 1]

CSO: 4007/555

BRIEFS

EARLY RICE--Wujiang County, Jiangsu, has reaped a bumper harvest from its 490,000 mu of early rice. The average per-mu yield is 13 percent higher than last year. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 22 Aug 81]

COTTON HARVEST--The supply and marketing departments in Jiangdu County, Jiangsu, has set up additional procurement stations in the county in preparation for a bumper harvest from the county's 70,000 mu of cotton planted this year. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 22 Aug 81]

COUNTY MAIZE--Xinyi County, Jiangsu, has reaped a bumper harvest of maize with total output reaching 91 million jin this year. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 23 Aug 81]

SILKWORM COCOON PRODUCTION--Jiangsu produced 764,000 dan of silkworm cocoons in 1980 at an annual rate of increase of 120,000 dan per year since the conclusion of the Third Plenary Session of the 11th CCP Central Committee. [Nanjing XINHUA RIBAO in Chinese 21 Jul 81 p 1]

PEANUT AREA EXPANDED--The area planted to peanuts in Jiangsu is more than 1.56 million mu, one of the largest in the past 10 years, and an increase of 300,000 mu over last year. Production responsibility systems have been adopted in peanut growing communes, and scientific farming methods are being stressed in various peanut producing districts, making the peanut production situation one of the best in many years. [Nanjing XINHUA RIBAO in Chinese 19 Jul 81 p 1]

CSO: 4007/555

BRIEFS

COUNTY LATE RICE--Linchuan County, Jiangxi, has grown more late rice this year. It has increased the acreage of late rice by 12,000 mu over 1980 with total acreage reaching 508,000 mu. It has also grown some 4,900 mu of coarse grain and soybean and 662 mu of sweet potato, and accumulated 2.5 million dan of manure. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 23 Aug 81]

EARLY RICE--People in Xiushui County, Jiangxi, have completed harvesting the county's 336,000 mu of early rice. The total output this year is 10 percent higher than last year and over 10 million jin higher than 1979, the former peak year. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 17 Aug 81]

CSO: 4007/556

BRIEFS

XILIN GOL LEAGUE LIVESTOCK--Hohhot, 17 Aug (XINHUA)--Xilin Gol League, Nei Monggol, has done very well in animal production this year. According to statistics, the total number of livestock in the league has reached more than 7,147,000 head this year, overfulfilling target by some 640,000 head. This year the league has raised more than 2 million young animals, or 30 percent over target, and the survival rate of young animals has reached 88.9 percent. The league's privately owned livestock this year has grown to more than 1.18 million head, an increase of 51.4 percent over the past year, averaging 6.6 head for each person. [OW240115 Beijing Xinhua Domestic Service in Chinese 0126 GMT 17 Aug 81]

CSO: 4007/556

BRIEFS

GRAIN OUTPUT--Yinchuan, 15 Aug (XINHUA)--Since the system of fixing farm output quotas on a household basis was introduced in the spring of this year, 21 production teams of Taole County, Ningxia, have increased their total summer grain output by 65.3 percent over last year. The amount of food grain distributed per person during the summer averaged 400 jin or double last year. These 21 production teams relied on resold grain, loans and relief in the past. Taole County has a total of 79 production teams. [OW240055 Beijing Xinhua Domestic Service in Chinese 0047 GMT 15 Aug 81]

CSO: 4007/556

PROTEIN ENHANCEMENT OF STEMS FED LIVESTOCK EXPLAINED

Jinan DAZHONG RIBAO in Chinese 11 Jul 81 p 2

[Article: "Basidiomycete Multiplies Protein Content of Plant Stems. Feeding of Hogs With 15 - 20 Percent Bacterial Feed Increases Weight by 15 Percent. Microbiology Institute of Shandong University Wins Achievement of Practical Value"]

[Text] The Microbiology Institute of Shandong University has won an achievement of practical value in using basidiomycetes in the fermentation of the stems of cereal crops, thereby increasing the protein content of the stems from between 2 and 4 percent to between 9.7 to 11.2 percent. Experiments show that when hogs are fed with a feed containing between 15 and 20 percent of these bacteria, their weight increases by 15 percent as compared with feeds to which these bacteria have not been added. Examination following slaughter, and performance of direct acute infection experiments on white mice, showed no toxic or other abnormal effects.

The Microbiology Institute of Shandong University was one of the earliest units in the country to undertake research on cellulose weishengwu [4850 3932 3670]. As long ago as the early 1970's, they proposed the use of basidiomycete to increase the protein content of stems. After the state assigned this research task to Shandong University, active research began with Professor Wang Zunong [3769 4371 6593] guiding two young lecturers, Gao Peiji [7559 1014 1015] and Ma Guirong [7456 2710 2837]. Following wideranging collection of bacteria species and continuous experiments, finally three basidiomycetes with fairly strong ability to break down fiber and xylem, converting it to fairly large amounts of bacteria protein were selected. Innoculation with these three basidiomycetes of unsterilized powdered cereal grass stems that have been treated with 3.5 to 5 percent aqueous ammonia at 15° to 20° C for 20 to 30 days produces bacteria feed containing between 9.7 and 11.3 percent protein, with a xylem breakdown rate of between 14.8 and 17.5 percent, and a cellulose breakdown rate of 20.3 to 34 percent. Chemical analysis of protein contained in this bacteria feed shows the presence of substantial amounts of 8 of the 10 amino acids essential to livestock, and fairly small quantities of the other two. Inasmuch as the technique for producing this kind of bacterial feed is fairly simple, in the course of experiments in rural villages some educated youths were able to master it after study.

9432
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QUALIFIED SUCCESS IN TISSUE CULTURING OF CHINESE CATALPA REPORTED

Jinan DAZHONG RIBAO in Chinese 11 Jul 81 p 3

[Article by Culturing Laboratory, Provincial Forestry Institute: "Tissue Culturing of Chinese Catalpa by Provincial Forestry Institute to Expand Propagation of Catalpa Trees"]

[Text] The Provincial Forestry Institute has employed tissue culturing methods to produce Chinese catalpa sapplings, which have remained alive following transplanting and have reached heights of 7 to 8 centimeters. Success in this experiment both shortens propagation time required for Chinese catalpa trees and provides conditions for the growing of large numbers of catalpa trees.

Catalpa trees are a tree variety growing in Shandong that produces excellent lumber. They may reach a height of 30 meters and a girth of from 60 to 200 centimeters. Because they grow straight, are rot resistant, and easy to process, the wood from these trees is commonly used in construction, for making furniture, wagons, and cabinetmaking. However, because catalpa trees "flower but do not set seeds," for a long time they have been propagated only through root tillers. Not only is it difficult to breed superior varieties in this way, but growing of large numbers is prevented. For the past several years, the departments concerned in the province have used river catalpa [3109 2825] as a stock for the grafting of Chinese catalpa. However, because of the need to grow stock first, two years were required to grow sapplings, thus limiting the expansion of propagation. Consequently, in 1979, the Provincial Forestry Institute began experiments with tissue culturing to culture catalpa trees. From a 15 to 16 year old catalpa tree, they selected for cultering and induced-growth sturdy one year old branches on which leaves and tender stems had just begun to bud but had not yet developed. As a result, as of the end of last year, they had cultured more than 3,000 green seedlings, and 72 complete sapplings. After being transplanted from test tubes to flower pots, though only two have survived for one reason or another, some experience has been gained. At present, efforts are underway to improve the condition of equipment for research in increasing the survival rate.

9432
CSO: 4007/539

COTTON'S LIGHT ENERGY NEEDS IN SHANGHAI-HANGZHOU BAY AREA DETAILED

Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE & TECHNOLOGY) in Chinese No 3, 5 Jun 81 pp 11-13

[Article by Pang Zhenchao [1690 2182 3390]: "Analysis of Light Energy For Directly Sown Cotton Following Wheat Harvest in Suburban Shanghai and on Both Shores of Hangzhou Bay"]

[Text] The Shanghai suburbs and both shores of Hangzhou Bay are part of the cotton growing area of the Yangtze River basin. Climatic conditions and the farm systems are virtually identical, winter crops (wheat, barley and naked barley plus rape) are grown just ahead of the cotton crop. For a long time it has been customary to sow cotton as a companion crop in the wheat fields, but in recent years a gradual change has taken place whereby seedlings are grown for transplanting after the wheat or barley crops have been harvested, while at the same time experiments have been conducted in the direct sowing of cotton after the wheat or barley harvests.

Some people maintain that when cotton is directly sown following wheat or barley harvests, yields are neither high nor consistent, nor is quality good. Experiments during recent years show, however, that so long as the laws of growth for the direct sowing of cotton after the wheat or barley harvest are mastered, and proper farming techniques used, high yields can be achieved. In Pinghu County's superior varieties farm, for example, in 1975 test planting of 15 mu of directly sown cotton brought yields of 201.1 jin per mu of ginned cotton. In 1976, the Chenshan Production Brigade of Huangshan Commune in the same county obtained yields of 141 jin per mu of ginned cotton from the direct sowing of cotton on 37 mu following the wheat harvest. In 1977, yields were 148 jin per mu of ginned cotton from 97.2 mu. Experiments on direct sowing of cotton following the wheat harvest conducted by the Ciqi County Cotton Institute brought yields of 149.8 jin per mu of ginned cotton in 1975 (Sumian No 3). In 1976, yields were 105.5 jin per mu of ginned cotton (Sumian No 3), and 117.9 jin per mu (Xuzhou 142). In 1977, yields were 80 jin per mu of ginned cotton (Sumian No 3), and 111.5 jin per mu (Xuzhou 142). In 1978, yields were 195.6 jin per mu of ginned cotton (Sumian No 3), and 249.4 jin per mu (Xuzhou 142), all fairly high yields. Tests performed by units concerned showed the quality of cotton directly sown following the wheat harvest to have no apparent differences from companion cropped cotton. The institute analyzed heat conditions in Ciqi County. During the growing season for cotton directly sown following the wheat or barley harvest (from the time of

sowing until the plants are pulled up), the accumulated temperature from days averaging ≥ 12°C amounts to 3,900°C or more, meaning that conditions exist for yields of 100 jin per mu of ginned cotton. The growing season for directly sown cotton following the wheat harvest in that county for the period 1954-1978 had accumulated temperatures from days averaging ≥ 12°C of more than 3,900°C. Years of accumulated temperatures of more than 4,000°C totaled 84 percent, meeting the aforestated conditions.

Certain heat and moisture conditions are necessary for growth and development, and to get a certain yield from cotton. However, fundamentally speaking, light energy is the energy source whereby crops carry on photosynthesis to produce yields. Research has shown that when plants carry on photosynthesis, they use only 400-700 microns of light energy in the visible spectrum of solar radiation, i.e., the effective rays for photosynthesis. Because of the delay in the growing season occassioned by the direct sowing of cotton following the wheat or barely harvest, changes in the time of growth, and differences occur in the effective rays for photosynthesis. This article analyzes, from the angle of light energy, light energy supply problems for cotton directly sown following the wheat or barley harvest in the suburbs of Shanghai and both shores of Hangzhou Bay.

1. Growing Season for Cotton Directly Sown After the Wheat Harvest

When daily average temperatures climb above 12°C, cotton seeds begin to sprout, and temperatures above 20°C are suitable for growth. The beginning and ending dates for daily average temperatures 12°C and 20°C for Shanghai, Hangzhou, and Andong are shown in Table 1.

Table 1. Beginning and Ending Dates for Temperatures 12°C and 20°C in Shanghai, Hangzhou, and Andong

Place	Start Month/Day	End Month/Day	No. of Days	Start Month/Day	End Month/Day	No. of Days	Data Years
Shanghai	4/6	11/17	224	5/24	10/3	132	1873-1972
Hangzhou	4/1	11/17	229	5/16	10/2	139	1951-1970
Andong	4/3	11/19	229	5/21	10/5	137	1954-1970

Note: Starting and ending dates were derived by using the histogram interpollation method on average temperatures for numerous decades.

The table shows the dates for the beginning of average daily temperatures of ≥ 12°C to be during the first 10 days of April and the ending dates to be during the middle 10 days of November, for a continuous 220 to 230 day period. The beginning dates for temperatures ≥ 20°C are in mid to late May, and the final dates are in early October for a continuous 130 to 140 days. However, since temperatures change greatly during the spring season, usually cotton is not sown until mid to late April, the seedlings appearing in early May. In mid-November after temperatures drop to below 12°C, growth ceases. Since temperatures are low in the late season, and since early frost is always a possibility, plants are generally pulled up in

early November. Thus, the period when companion cropped (or transplanted) cotton can carry on photosynthesis to produce yields is a period of about 180 days between May and October. Cotton that is directly sown after wheat is sown following the wheat harvest. In Hangzhou and Andong, the time for harvesting wheat and barley is during mid to late May (slightly later in Shanghai). Temperatures are high at this time, and seedlings appear fairly quickly after sowing. By early June seedlings are at a full stand, and by early November plants are pulled up. The period during which photosynthesis can be carried out to produce output is about 150 days between June and October. May to October is the growth period for cotton that has been companion cropped (or transplanted), and June to October is the growing season for cotton directly sown as the crop to come after wheat.

2. Effective Radiation for Photosynthesis and Utilization of Light Energy

There is presently no systematic test data in China or abroad about effective radiation for photosynthesis. Both China and Japan have used H.A. Yefeimowa's [0673 5481 5459 1216] [phonetic] formula for calculations:

$$Q_{PAR} = 0.43S + 0.57D$$

In this formula, Q_{PAR} is the effective radiation for photosynthesis. S is direct radiation, and D is scattered radiation.

Liu Hong [0491 3163 7311], of the Agricultural Meteorology Institute of the Chinese Academy of Agricultural Sciences has conducted observations using day long radiation measurements for photosynthesis produced in Japan, comparing these with computations made using the aforementioned formula. He discovered that over a long period of time, the calculated values showed only extremely slight differences from the measured values, and were suitable for use.

Use of the aforestated formula to make calculations using direct radiation and scattered radiation test data for Shanghai, Hangzhou, and Andong showed the effective radiation for photosynthesis during the growing period (June to October) for cotton directly planted after the wheat to be 26.71-29.51 kilocalories per square centimeter, amounting to 1.781-1.967 x 10^8 kilocalories per mu (See Table 2).

Table 2. Effective Radiation For Photosynthesis and Yields of Ginned Cotton During the Growing Season Following Wheat

	Effective Radiation for Photosynthesis			
Place	Kilocalories per square cm.	Kilocalories per mu	Ginned Cotton (Jin/Mu)	Data Years
Shanghai	29.51	1.967 x 10^8	139	1958-1972
Hangzhou	26.71	1.781 x 10^8	126	1959-1979
Andong	28.83	1.922 x 10^8	136	1963-1979

Figuring the quantity of energy required to form 1 gram of dry organic material to be 4.25 kilocalories, and the economic coefficient for cotton (ginned cotton) to be 0.15, when the effective radiation for photosynthesis in cotton is 1 percent, yields will be 126-139 jin per mu of ginned cotton. (Table 3).

Table 3. Utilization Rate of Effective Radiation By Cotton Directly Sown Following Wheat

Year	Effective Radiation for Photo-Synthesis	Ginned Cotton Yields When Utilization Rate is 1% (Jin/Mu)	Ginned Cotton Yields (Jin/Mu)		Utilization Rate	
			Sumian No 3	Xuzhou 142	Sumian No 3	Xuzhou 142
1975	25.46	120	149.8	--	1.25	--
1976	22.97	108	105.5	117.9	0.98	1.09
1977	25.34	119	80.0	111.5	0.67	0.94
1978	28.83	136	195.6	249.4	1.44	1.83

Ginned cotton yields of 141-201 jin per mu from cotton directly sown after a wheat crop in Pinghu County, when the utilization rate of effective radiation for photosynthesis was above 1 percent, demonstrate that the utilization rate of effective radiation for photosynthesis for cotton directly planted after a wheat crop can amount to around 1 percent.

The effective radiation for photosynthesis can vary from one year to another. The author figured the year by year effective radiation for photosynthesis for Shanghai (1958-1972), Hangzhou (1959-1979), and Andong (1963-1979). For Shanghai, it was 25.12-32.53 kilocalories/cm^2; for Hangzhou, it was 20.47-31.50 kilocalories/cm^2; and for Andong, it was 22.97-35.83 kilocalories/cm^2. When cotton's utilization rate of physiological radiation is 1 percent, yields of ginned cotton were 118-153 jin per mu in Shanghai, 96-148 jin per mu in Hangzhou, and 108-169 jin per mu in Andong. Except for individual years in Hangzhou, yields of ginned cotton were greater than 100 jin per mu. When the guaranteed rate for ginned cotton output was 50 percent, it was 136 jin for Shanghai; 124 jin for Hangzhou; and 133 jin for Andong. When the guaranteed rate was 80 percent, it was 132 jin for Shanghai, 117 jin for Hangzhou, and 126 jin for Andong (See plate.)

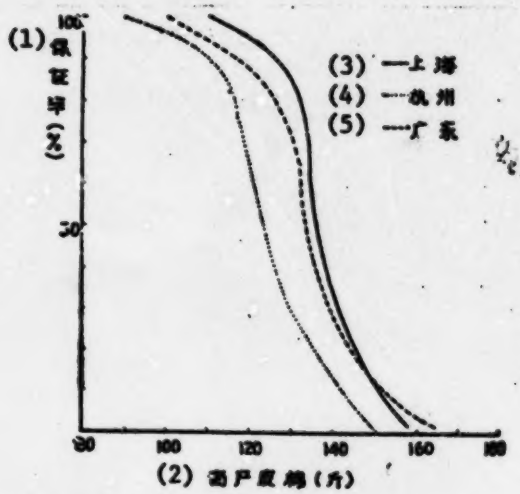
3. Effective Radiation for Photosynthesis For Various Growing Seasons

Investigative and experimental reports show the growing seasons for directly sown cotton in the aforementioned areas to be generally:

Growing Season	Companion Sown (Transplanted) Cotton	Cotton Directly Sown After a Wheat Crop
Sowing to sprouting	Late April	Late May
Sprouting to squaring	May to mid-June	Early June to early July
Squaring to flowering	Late June to early July	Mid-July to late July

Flowering to boll opening	Mid-July to Mid-August	Early August to Late August
Boll opening to pulling up of plants	Late August to late October	Early September to late October

On the basis of the foregoing periods, the effective radiation for photosynthesis during the growing season in Shanghai, Hangzhou and Andong was calculated. See Table 4.



(6) 图 上海、杭州、南京套播直播棉产量保证率

Key:
1. Guaranteed Rate (%)
2. Ginned Cotton Yields Per Mu (Jin)
3. Shanghai
4. Hangzhou
5. Andong
6. Plate. Guaranteed Rates for Yields of Cotton Directly Sown After a Wheat or Barley Crop in Shanghai, Hangzhou, and Andong

Table 4. Effective Radiation for Photosynthesis for Each Growing Season (Kilocalories/cm^2

	Sprouting to Squaring		Squaring to Flowering		Flowering to Boll Opening		Boll Opening to Pulling Up Plants	
Place	Direct Sowing	Companion Sowing	Direct Sowing	Companion Sowing	Direct Sowing	Companion Sowing	Direct Sowing	Companion Sowing
Shanghai	8.23	9.71	5.01	4.37	6.98	9.74	9.20	11.45
Hangzhou	6.89	8.38	4.69	3.69	6.53	9.18	8.51	10.55
Andong	7.25	9.48	5.08	3.99	7.11	9.96	9.12	11.35

Note: Years for data same as for Table 2.

Table 4 shows that the effective radiation for photosynthesis during each growing period for cotton sown directly after a wheat crop as compared with companion sown (or transplanted) cotton to be 1.2-1.4 kilocalories/cm^2 less during the sprouting to squaring period; 0.6-1.1 kilocalories/cm^2 more during the squaring to flowering period; 2.6-2.9 kilocalories/cm^2 less between the flowering to boll opening stage, and 2.0-2.3 kilocalories/cm^2 less during the boll opening to plant pull up stage. However, the effective radiation for photosynthesis during the squaring to flowering stage is conversely more for directly sown cotton than for companion sown cotton. In view of this characteristic, when directly seeding cotton after a wheat crop a medium to early ripening variety should be selected, density should be appropriately increased, and the time for topping should be advanced to promote the cotton's light energy utilization for increases in yields.

9432
CSO: 4007/544

TWO NEW HYBRID RICE VARIETIES CHARACTERIZED

Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 3, 5 Jun 81 p 33

[Article by Rice Propagation Laboratory, Crop Institute, Shanghai Municipal Academy of Agricultural Sciences: "New Rice Varieties 6366 and 109"]

[Text] (Number 1) 6366 (Intermediate Maturing Late Geng Rice)

Breeders: Fan Hongliang [4636 3163 5328], Lu Jiaan [7120 1367 1344], Gan Shougen [1626 1108 2704], Jiang Yusheng [3068 7183 3932], Hu Daojiang [5170 6670 3068], Zheng Zuling [6774 4371 3781], Cai Fugen [5591 4395 2704], and Yu Boqi [0205 0130 1477].

Breeding Process: In the spring of 1974, our institute used (Kengui x Keqing No 3) x Liming in multiple crossings, breeding being done three times between 1974 and 1976 in Shanghai plantings, and once on Hainan Island. In 1976, the F_4 generation was brought forward, and in 1977, this variety participated in a comparison of lines. In 1978, 1979, and 1980 it was test grown in the Shanghai suburbs, in Zhejiang, in Jiangsu, and in Anhui. In 1980, it participated in late season rice area experiments in Shanghai.

Properties and characteristics. Short stems; plant height around 70 centimeters; study and pliable stems; tolerant of fertilizer and resistant to lodging; small bottleaf angle; leaves short and wide, upright, and delicate; changes color well during late season; green stems turning yellow at maturity; moderate tillering strength; fairly high panicle formation rate. Panicles are about 14 centimeters long, each one containing about 70 grains of which about 60 are fully developed. Grains fairly small in size; per thousand grain weight about 25 grams. Both grain sheaths and tips of apicles straw colored; no awn; 83 percent polished rice rate; rice of good quality and good tasting. Strong tolerance of cold. During 1980, fruiting rate was approximately 85 percent in conditions of low temperatures and cold damage. Resistant to bacterial blight; moderately resistant to blast of rice; tolerant of salinity-alkalinity. As a late crop rice, growing period is about 135 days; as a single crop rice, growing period is about 155 days.

Test planting appraisal: Took first place in 1977 in comparative experiments with varieties for yields, producing the equivalent of 1,001 jin per mu, somewhat more than for the control, Jianong 15. Test planted in 1978 at five places in the

Shanghai suburbs, each place having a planting area of 0.5-1 mu, yields averaged 872.4 jin per mu. In test plantings at many sites during 1979 on an area of more than 100 mu, yields were 850 jin per mu. According to statistics from seven sites, yields from areas of 2 to 12 mu each averaged 892.5 jin per mu, with a maximum yield of 950 jin from one plot. In numerous test plantings in 1980 over an area totaling more than 2,000 mu, statistics from 15 sites showed that from planting areas of from 1 to 36 mu, the average increase in yields was 21.4 percent higher than for the local varieties with which it was compared. In Shanghai late crop rice growing areas, 10 sites showed increases in yields over the variety with which it was compared, and one showed equivalent yields, yields averaging 602.4 jin per mu, or 16.7 percent higher than for Shuangfeng No 1. Planted as a late rice in a single crop system at the Xuxing Commune Farm Science Station in Jiading County, yields amounted to 1,091 jin per mu. In the Linping area of Yuhang County in Zhejiang Province where it was compared with the locally promoted Wan 3-2 stock varieties in test plantings at five sites, 6366 had yields averaging 562.5 jin per mu, a 12.1 percent increase in yields over Wan 3-2. At five test planting sites of the Daqian Region Farm Techniques Station in Zhenhai County, Ningbo Prefecture, yields averaged 692.5 jin per mu, a 26.6 percent increase over the variety with which it was compared.

(Number 2) 109 (Early Maturing Late Geng)

Breeders: Fan Hongliang, Lujiaan, Zheng Zuling, Gan Shougen, Jiang Yusheng, Cai Fugen, Yu Boqi, and Ma Yongxiang [7456 3057 4382].

Breeding Process: Selected from a row of 1404 variety panicles for a late crop rice breeding problem at the Crop Institute of the Municipal Academy of Agricultural Sciences in the autumn of 1975. The parent pair combinations for 1404 were Jingyin 66 x Shuangfeng No 1. Reproduced the winter of the same year on Hainan Island. During the 4 year period 1977 to 1980, test planted in demonstrations at numerous sites in the Shanghai suburbs. In 1980, participated in late crop rice area experiments in Shanghai.

Properties and characteristics: Plant height about 90 centimeters. Plant shape fairly bushy; leaves fairly long; bootleaf upright; leaf color jade green; changes color well in late season. Moderate tillering rate; requires little fertilizer, and much fertilizer inclines it toward lodging. Approximately 70 grains per panicle, 60 of which are fully developed; fruiting rate about 90 percent. Grains in husks are oval shaped; grain husks and panicles are straw colored. Polished rice rate is about 84 percent. Quality of rice is superb. Strongly tolerant of cold in late season; moderate resistance to diseases; has a growth period of about 130 days; tolerant of late sowing and late planting; suitable for cultivation as a final late rice crop. Capable of producing consistently high yields.

Test planting appraisal: Sown on 22 June and transplanted on 7 August in test plantings at the Fengwei Commune Superior Varieties Farm in Jinshan County in 1977, yields were 739.2 jin per mu, 14.2 percent higher than those from the comparison variety, Jianong 15, which was sown and transplanted at the same time. The same farm planted 40.8 mu of it in 1978 for yields averaging 740 jin per mu, a maximum yield plot producing 869 jin. In test plantings at numerous sites in the Shanghai

suburbs during 1979 over an area of more than 1,000 mu, yields were from 700 to 750 jin per mu, a high yield plot producing more than 800 jin. The Fengwei Commune Superior Variety Farm in Jinshan planted 26 mu for yields averaging 805.6 jin per mu. The Dongfeng Production Brigade of Fengwei Commune planted 54 mu for yields averaging 703.5 jin per mu. Oukuang Commune at Wuxi in Jiangsu planted 9 mu for yields averaging 776.7 jin per mu. An 0.6 mu plot on the experimental farm of the Shanghai Municipal Academy of Agricultural Sciences produced 813 jin per mu, 13 percent more than comparison variety Shuangfeng No 4. 1980 was a year of low temperature damage, but in municipal region testing, 11 sites had yields averaging 493.4 jin per mu, 7.0 percent more than comparison variety Shuangfeng No 4. More than 20,000 mu of it is grown in the suburbs of Shanghai.

9432
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APPEAL MADE FOR INCREASED DRYLAND FARMING

Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 6, Jun 81 pp 18-19

[Article by Fei Duhong [2431 6757 4767]: "Yuncheng Prefecture Should Give Close Attention to Dryland Farming"]

[Text] Nine out of every ten years are drought years in Yuncheng Prefecture, and for a long time it has been generally believed that the major contradiction in farming there is a lack of water, that the key to increased agricultural output is water. Every means has been used in water conservancy efforts. This year countless projects for sinking wells, digging ponds, building reservoirs, repairing ditches, and diverting the Huang and the Fen rivers have required investments of tens upon tens of millions, but the grain output situation remains not high, not consistent, and not rapid. This shows that placing reliance entirely on water in Yuncheng Prefecture merits study.

1. Limitations on Development of Wetland Agriculture

That wetlands yield higher outputs than drylands is an objective fact. In Yuncheng Prefecture, however, for a long time, no extensive increase in the wetland areas has been possible. This is because:

First, underground water has been excessively tapped. Underground water reserves in the prefecture amount to 840 million cubic meters, of which 750 million cubic meters has already been tapped. Plains areas irrigated by wells have tapped excessive and a marked decline has occurred throughout the prefecture in the underground water table. Take the Yuncheng-Yongji county region, for example. The lake and marshland areas of the 1950's are now virtually dry as the underground water table has fallen to below 30 meters, and there is virtually no further shallow water layer. During the 1960's all artesian wells were reported no longer working. In Xia County, where underground water resources are fairly good, moving water reserves amount to only 110 million cubic meters, of which 120 million cubic meters have already been exploited. As a result of the drop in the underground water table, the cost of lifting water for irrigation has increased commensurately. According to calculations by a production brigade, today's cost of watering 1 mu of land equals the cost of watering 3 mu of land during the 1960's. Even so, some places are still blindly sinking wells, and frequently for every deep well they sink, several shallow wells become useless. The above situation demonstrates that the lack of underground water is not a temporary problem; it is likely to get worse.

Second, exploitation of surface water is difficult. The water resources in Yuncheng Prefecture are fairly abundant. The Yellow river courses through eight counties; the Fen river courses through four; and the Sushui traverses six. But the Yellow river frequently lacks water; the Fen river regularly stops flowing, and the Sushui is virtually dried up. When the Huang and the Ren are low, the water can be lifted uphill, but raising the water is difficult, and frequently there is no water to raise. Though 10 electromechanical irrigation stations, large and small, have been built at places such as Zuncun, Jiamakou, Dayudu, and Xiaoyi, they far from satisfy the needs of agriculture for water. The prefecture annually requires about 3.2 billion cubic meters of water, presently only 1.2 billion cubic meters of which can be provided, more than 2 billion cubic meters being lacking.

Third, the financial and material resources are seriously inadequate. Development of wetlands requires capital, and whether provided by the state or the collective, vast sums of investment cannot be made in a short period of time for the construction of water conservancy projects. It is also necessary to consider the economic benefits of large scale raising and diversion of water for irrigation. In addition, we must not forget that Shanxi Province will be a future energy base, in the process of construction of which there will be great competition with agriculture for the use of underground water, and great destruction of underground water resources as well. The "water crisis" must be guarded against early. Consequently, sole reliance on increase in wetlands for the development of agriculture will make for a big future mess. But where is the way out for agriculture in Yuncheng Prefecture? The answer is that when the water route is blocked, take the dry road.

2. The Inevitability of Dryland Farming

Suggesting the inevitability of dryland farming proceeds, first of all, from the climatic characteristics of Yuncheng Prefecture. For almost 20 years now, annual precipitation has averaged about 540 millimeters, and because of its uneven and unbalanced distribution, this quantity has been substantially unable to satisfy ordinary crop consumption needs. An analysis of meteorological data for the past 28 years shows that spring droughts of varying severity have occurred every 6 to 9 years out of 10. Summer drought has occurred in 21 of these 28 years, severe drought occurring in 4 years. This is the prefecture of most severe summer drought in the province. Consequently, dryland farming will become a conspicuous feature of agriculture in Yuncheng. This will require that those responsible for guiding agricultural production establish a guiding mentality in which dryland farming is dominant, distributing leadership energy, manpower, financial and material resources to make the drylands hold a major position.

In terms of land area, as well, the dryland area is great, amounting to 58.7 percent of the total. To a certain degree, this regulates the form of agricultural production in the prefecture. When whether conditions are ideal, dryland harvests are good and the whole prefecture has a bumper crop year. When drought occurs and dryland output falls, the whole prefecture suffers. The problems of not high, not consistent, and not rapid agricultural output that I spoke of above, are the result, primarily of the drag that drylands exert. This raises a problem for our production departments and research units. They should give attention to research to find a series of techniques for increased production over large dryland areas, to gradually effect a change in the backward state of dryland farming.

In emphasizing the importance of dryland farming, we by no means overlook the role of wetlands. We say only that in the current situation in which no great development of wetlands is possible, and considering that communes and brigades do not have rich financial resources, it is necessary to do what is feasible, to surmount the guiding mentality that emphasizes wetlands and slight drylands, to face facts, and to place dryland farming in a commanding position. This is where the way out for farming in Yuncheng Prefecture lies.

3. Possibility of Good Dryland Farming

In establishing a guiding mentality in which dryland farming is dominant rather than passively resigning oneself to fate, and while being unable to change the dry climate, or being temporarily unable to convert drylands into wetlands, what other measures may be used to solve the moisture needs for crop growth. Yuncheng has a long history and abundant experience with dryland farming. It also possesses a great potential, and has many prominent representative examples. All that is necessary is diligent summarization and spread of these experiences, and doing a good job of dryland farming will be entirely possible. The most important of these experiences are as follows:

First, is storing of water and preservation of moisture, making full use of water from the sky. The experiences of Dongguanzhuang in Wenxi County in "spring use of summer rains" provide us a model for study.

Second, is seeking water in fertility by improving the soil structure. In order to strengthen the soil's capacity to store water and preserve moisture, the organic content of the soil has to be increased. Measurements show that cultivated land with an organic content of 1.12 percent will evaporate between 14 and 19 percent less moisture in a given period of time than soil with an organic content of 0.6 percent. The organic content of the soil in Yuncheng Prefecture is generally only about 0.6 percent. The main ways to increase the organic content of the soil are to grow a lot of green manure, to return stalks and stems to the fields, and to develop a livestock industry.

Third, is development of superior varieties, increasing crop capacity to withstand drought. Seed propagation work should also have its emphasis shifted to dryland farming, with extra attention going to propagation of various superior crop varieties suitable for growing in different types of drylands in order to meet the needs of developing dryland farming.

Fourth, is extension of the use of the new technique of using plastic sheet covering in farming.

At the present time, there is a great difference between dryland and wetland output in Yuncheng Prefecture, and the potential for dryland argiculture is very great. With a straightening out of the guiding mentality plus commensurate technical measures, great development in dryland farming is definitely possible.

9432
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ZHEJIANG PROVINCE MARKS PROGRESS IN EXTENSIVE ELECTRIFIED WATER PUMPING

Hangzhou ZHEJIANG RIBAO in Chinese 4 Jul 81 p 1

[Article by Zhao Yu [6392 1946], Provincial Department of Water Conservancy: "Area Drained and Irrigated by Power Equipment Amounts to 17 Million Mu. Vast Strengthening of Ability of Zhejiang Province's Farmlands To Withstand Natural Disasters"]

[Text] Since the founding of the People's Republic, flourishing development has taken place in Zhejiang Province's drainage and irrigation using machinery and power equipment. As of the present time, the area drained and irrigated by power equipment amounts to 17 million mu, which is 86 percent of the area suited to the use of power equipment for drainage and irrigation.

Up until the time of Liberation, the rural villages of the province relied principally on wooden water wheels and portable bailing buckets. Because water conservancy facilities were not well maintained, upraised fields readily dryed out, and lowlying fields were prone to waterlogging. Drought and flood disasters occurred year after year. Following Liberation, under the leadership of the party and the People's Government, the people of the province pooled the wisdom of all, struggled arduously, and unflaggingly carried out construction of farmland water conservancy. More than 20,000 diked reservoirs, and more than 5,000 large and small hydroelectric power stations were built. The total amount of water impounded amounted to 26 billion cubic meters. Numerous streams were dredged so as to be able to bring in and release water, creating conditions for development of drainage and irrigation using power equipment. Now the entire province from its lakeshores to its seacoast, to the banks of great rivers, and from islands in the sea to inland hills, in every county and commune have power drainage and irrigation facilities. The power of the power equipment for drainage and irrigation amounts to 1.46 million horsepower, 150 times the amount during the period immediately following Liberation. It includes 640,000 kilowatts of electric motors, more than 45,000 kilometers of high voltage electric power lines for use in agriculture, 125,000 kilometers of low voltage power lines, and an annual quantity of water lifted amounting to 8 billion cubic meters.

The prolific development of machine powered drainage and irrigation endeavors has effectively increased the ability of the farmlands to withstand natural disasters. Jiaxing Prefecture on the Hangjia Lake Plain now boasts a machine

operated drainage and irrigation station in every commune and brigade, and the area of machine operated drainage and irrigation amounts to more than 90 percent of the total paddyfield area. Since Liberation, this prefecture has triumphed over flood and drought disasters more than 10 times, and in concert with other measures to increase output, farm crop production has risen year by year. Per mu grain yields for the prefecture in 1964 exceeded the "National Program for Agricultural Development;" in 1970 they exceeded 1,000 jin, and in the great drought year of 1978 when the siutation was the same as in 1934, thanks to draining and irrigation capabilities, crop prospects were greatly strengthened and a bumper harvest in agriculture was won. Eight counties had 100 million jin increases in grain output; and great increases also occurred in outputs of silkworm mulberry, cotton and hemp.

Development of power operated drainage and irrigation endeavors has promoted improvements in agricultural techniques and has emancipated large numbers of the rural workforce. The saving in workforce occasioned by a change to machine powered drainage and irrigation from water wheels operated by human labor is alone estimated at 250 million man days per year throughout the province. The grain saving in the rural workforce set the conditions for increasing the multiple cropping index, for intensive farming, for the launching of diversification, and for deep and wideranging advances in production. Now, in all the places where machine powered drainage and irrigation has become a reality, more than 20 kinds of handicraft industry devices have been converted to electric power, and removal of grain husks, processing of agricultural byproducts and the grinding of fodder has been substantially electrified, and electric plowing, and electric light sources for insect control have been developed. Development of commune and brigade enterprises has increased the earnings of the collective economy.

9432
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BRIEFS

PROFIT TARGETS--By the end of July 1981, the supply and marketing departments in Pingyang County, Zhejiang, made profits exceeding 1.83 million yuan, fulfilling the annual target for profits 5 months ahead of schedule. [Hangzhou Zhejiang Provincial Service in Mandarin 0400 GMT 18 Aug 81]

EARLY RICE--Yuhuan County, Zhejiang, has reaped a bumper harvest of early rice. The total output has exceeded 62 million jin, topping last year's by more than 2 million jin. By 21 August, the county had also overfulfilled the procurement quota for this year's early rice by selling more than 9 million jin of early rice to the state. [Hangzhou Zhejiang Provincial Service in Mandarin 1040 GMT 22 Aug 81]

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II. PUBLICATIONS

TABLE OF CONTENTS OF 'LINYE KEXUE' NO 2, 1981

Beijing LINYE KEXUE [SCIENTIA SILVAE SINICAE] in Chinese No 2, 1981 inside back cover

[Text] A Study on the Ecological Factors of Blossoming Period and Fruiting Ability of Camellia oleifera.....Lin Shaohan [2651 1421 7281], Subtropical Forestry Research Institute, Chinese Academy of Agricultural Sciences; et al. (113)

Outbreak Forecast of the Pine Caterpillar in Jiangxi Province .....Zhao Qingshan [6392 3237 1472], Forestry Research Institute, Chinese Academy of Forestry (123)

The Geographical Distribution and a Suggestion of the Main Commercial Timber Production Areas of the Chinese Fir..... Southern Fir Tree Cultivation Cooperative Group (134)

Tests on Natural Decay Resistance of the Important Timber in China.....Zhou Ming [0719 2494], Institute of Wood Industry, Chinese Academy of Forestry (145)

The Correlation of Crop Yield with Microclimatic Factors within a Mesh (Field Protected by Tree Shelterbelts)..... Wei Lin [5898 2651] and Jiang Ailiang [3068 1947 5328], both of the Institute of Geography, Chinese Academy of Sciences; Song Zhaomin [1345 0340 3046] and Chen Jianye [7115 1696 2814], both of the Forestry Research Institute, Chinese Academy of Forestry Sciences (155)

The Distributive Rules of the Chinese Forest Soils..... Zhang Wanru [1728 8001 0320], Li Yiquan [2621 6318 6898], Yang Jihao [2799 4949 6964], et al., all of the Forestry Research Institute, Chinese Academy of Forestry Sciences (163)

An Investigation of Flowering and Vegetative Rejuvenation of Phyllostachys bambusoides.....Lu Jionglin [4151 3518 2651], Henan Agricultural College (173)

A New Species of Matsucoccus in Heilongjiang Province (Homop: Margarodidae).....Hu Yinyue [5170 7148 2588], Northeastern Forestry College; Hu Jinlin [5170 6855 2651], Shanghai Institute of Entomology, Chinese Academy of Sciences (178)

A New Species of the Genus Sphecia from China (Lep: Aegeriidae) .....Xu Zhenguo [1776 2182 0948], Forestry Research Institute, Qinghai Academy of Agriculture and Forestry (181)

Studies on the Development of Dothiorella canker of the Poplar .....Jing Yao [2529 5069] and Yang Junxiu [2799 0193 4423], both of the Northwest Forestry College (183)

Relation between Production and Distribution of Dry Matter and Organ Growth in One-year Seedlings of Masson's Pine (Pinus massoniana lamb.).....Yang Qiguang [2799 0366 0342], Anhui Agricultural College (189)

Discussion

Preliminary Discussion of Forest Value in China.....Wang Changfu [3769 7022 1381], Forestry Economics Research Institute, Chinese Academy of Forestry Sciences; Zhang Jianguo [1728 1696 0948], Fujian Forestry College (194)

Calculation of Ropeways by the Perturbation Method..... Ni Yuanzeng [0242 0337 1073], Northeast Agricultural College (202)

Scientific Notes

Afforestation on Dry Steppe and Semi-desert Zone..... Li Yigong [2621 0001 0501], Afforestation Bureau, Ministry of Forestry; et al. (209)

Study of the Anatomical Indicators for Cultivating a Superior Variety of Rhus verniciflua Stokes.....Wang Qinsheng [3769 4440 3932], Xi'an Botanical Gardens; Hu Zhenghai [5170 2973 3189], Department of Biology, Northwestern University (217)

The Utilization of Tachinid Parasites to Control Forest Insect Pests.....Chen Boyao [7115 6959 1031], Anhui Agricultural College (221)

9717
CSO: 4007/482

TABLE OF CONTENTS OF 'ZHONGGUO XUMU ZAZHI' NO 2, 1981

Tianjin ZHONGGUO XUMU ZAZHI [CHINESE JOURNAL OF ANIMAL SCIENCE] in Chinese No 2, 5 Apr 81 on back cover

[Text] The Metabolic Rate of Non-nutritive Matter in Poultry Feeds and Its Regression Analysis with the Value of the Apparent Metabolizable Energy.....Wu Keqian [0702 0344 6197], Chen Xuexiu [7115 7185 4423] and Zhang Ziyi [1728 1311 0308], all of the Institute of Animal Husbandry, Chinese Academy of Agricultural Sciences (1)

Observations on Puberty of the Erhualian Pig.....Yan Zhongshen [0917 1813 1957] and Zhang Chaokun [1728 2600 2492], both of the Jiangsu Agricultural College; Wu Lijun [0702 4539 6511], Nanjing Agricultural College; et al. (5)

Studies of the Pattern of Estrus and Ovulation of the Beijing Black Pig.....Liu Xianzu [0491 7359 4371] and Wang Linxian [3076 3829 0103], both of the Physiology Teaching and Research Group, Department of Veterinary Medicine, Beijing Agricultural University; et al. (9)

More Convenient Insemination Pen Devised for Cattle..... Xie Puhua and Jiao Qinglian (11)

Estrus Detection in Accordance with the Change of Texture of the Uterus and Cervix in Cows.....Zhou Dakang, et al. (12)

Study of Early Weaning of Pigs.....Chen Tingji [7115 1694 3444] and Lu Xiaofen [7120 5135 5358], both of the Animal Husbandry and Veterinary Medicine Research Institute, Hubei Academy of Agricultural Sciences (13)

A Preliminary Observation of the Binhu Water Buffalo of Jiangxi Province.....Fan Yuhua (15)

Test of Slaughter Yield of Fat Lambs.....Lu Zhonglin, et al. (17)

Experience in Raising the Female Ratio of Reproduction in Nanjing County, Fujian Province.....Lai Jinyan (18)

Feeding Test Using Bantonite as an Additive to Broilers' Feed.....Fang Deze [7455 1795 3419], Department of Biology, Liaoning Teachers College; et al. (19)

The Practice of Raising Breeding Hens and Layers in Windowless Type Housing with High Decks and Flat Wire Floors..... Ma Wenliang, et al. (22)

Method of Calculating the Weight of Cuboid Hay Stacks Based on Volume.....Huang Yingsan [7806 2019 0005], Hengyang Branch of the Hunan Agricultural College (24)

Tests on the Effect of Fattening De-winged Chicks and Goslings.....He Zaotang (25)

Recommending a Convenient and Hygienic Type of Rabbit Housing .....Zhang Fenghui (26)

A Brief Introduction to the International Conference of Animal Reproduction and Artificial Insemination.....An abstract from P.L. Zheng's report (27)

Method of Calculation of the Inbreeding Index.....Yang Xianwu (32)

The General Condition of Animal Husbandry and Grassland in Japan.....Ping Fang (33)

Test of the Detoxification of Linseed Oil Cakes.....Yu Dakuai [0205 1129 1040], Gansu Epidemic Prevention Station (36)

A Pilot Test on Azolla filiculoides (A Water Plant that can be Used as Greed Feed for Pigs and Poultry).....Yao Shuqing, et al. (38)

A Preliminary Study of the Appropriate Time for Slaughter of the Finishing Pig.....Yang Wenhui (39)

9717
CSO: 4007/479

TABLE OF CONTENTS OF 'TURANG TONGBAO' NO 2, 1981

Shenyang TURANG TONGBAO [JOURNAL OF SOIL SCIENCE] in Chinese No 2, 5 Apr 81 on back cover

[Text] The Response of Crop Yield to the Zinc Fertilizer Applied to the Paddy Soil in Hubei Province.....Xie Zhenchi [6200 2182 5041], Deng Kaiyu [6772 7030 1342] and Yang Haiqing [2799 3189 3237], et al., all of the Soil and Fertilizer Institute, Hubei Academy of Agricultural Sciences (1)

The Pea Introduced to Rotation Systems in relation to Increase in Soil Fertility and Crop Yield.....Peng Lin [1756 3829] and Peng Xianglin [1756 4382 2651], both of the Northwest Water and Soil Conservation Research Institute, Chinese Academy of Sciences (4)

Turning Over of Rice Straws into Soil in relation to Soil Fertility and Increase in Crop Yield.....Yiyang District Institute of Agricultural Science, Hunan Province (6)

The Root System of Sweet Clover and Its Fertilizing Effect .....Gong Guangyan [7895 0342 3508], Zhang Sufei [1728 4790 5481] and Li Gongzhi [2621 1872 1807], all of the Soil and Fertilizer Institute, Hunan Academy of Agricultural and Forestry Sciences (8)

Different Rotation Systems Practiced in Double Cropping Rice Fields in Winter in relation to Increase in Soil Fertility and Crop Yield.....Xiao Shuxian (10)

Tillage, Rotation and Multiple Cropping Systems on Farmland in Jiangxi Province.....Ye Leshi [5509 2867 1102], Jiangxi Agricultural Reclamation Bureau (14)

Properties, Formation and Amelioration of Purple Bicarbonate Clayey Soil.....Wang Tingdong (16)

Means of Ameliorating Black Clay Cotton Fields and Its Effect on Increase of Crop Yield.....Huang Bufan [7806 0008 0416], Wang Weimin [3769 4850 2404] and Wang Wenshan [3769 2429 1472], all of the Soil and Fertilizer Research Institute, Chinese Academy of Agricultural Sciences (19)

Variation of Soil Salinity and Movement of Underground Water in relation to Preservation of Young Wheat Plants in Guanzhang East of Tianjin.....Liu Nianzu [0491 1819 4371], Huang Youbao [7806 0645 1405] and Duan Menglian [3008 1322 5114], all of the Department of Soil Chemistry, Beijing Agricultural University (22)

An Investigation of the Optimum of Underground Water for Salt Prevention in Panjin Irrigated Area.....He Shoucheng [0149 1343 2052], Zou Daling [6760 1129 0109] and Chen Yuying [7115 3768 5391], all of the Liaoning Saline-alkali Soil Utilization Research Institute (25)

Analysis of Soil Moisture Regime in Gray Meadow Soils during Seedling Stage in West Liao River Valley and Methods of Prediction.....Diao Zhenzhong [0431 2182 0022] (28)

Relationship between Stability of Soil Aggregates and Nutrient Condition of Cultivated Black Soils.....Shen Shanmin [3088 0810 2404], Forestry and Soil Research Institute, Chinese Academy of Sciences (32)

Bamboo Grove Soils in the Southern Part of Sichuan Province .....Li Derong (34)

The Policy of Readjustment Should Also Be Carried Out in Current General Survey of Soil Resources.....Lin Pei [2651 1014], Beijing Agricultural University (37)

Determination of Soil Organic Carbon by Hydration Heat Method.....An Zhanshi [1344 2069 1102], Northwest Agricultural College (39)

A Method for Determining Nitrates in Soil by Using a Color-changing Acidic Powder.....Li Hongjun [2621 7703 6874], Soil and Fertilizer Research Institute, Chinese Academy of Agricultural Sciences (41)

A Review of Oxides in Soil Colloid.....Chen Jiafang [7115 1367 0972], Nanjing Institute of Pedology, Chinese Academy of Sciences (44)

9717
CSO: 4007/484

TABLE OF CONTENTS OF 'SENGONG KEJI TONGXUN' NOS 2-3, 1981

Beijing SENGONG KEJI TONGXUN [FOREST INDUSTRY SCIENCE AND TECHNOLOGY] in Chinese Nos 2 and 3, 1981

[No 2, 15 Feb 81 on back cover]

[Text] The Features and Basic Data of a Light Diesel Truck..... (1)

A Brief Introduction to a Hydraulic Machine that Forms Rafts..... (4)

SL-3B Remote-controlled Machine with Radio for Forestry (Part Six)..... (7)

Improvement in Measuring Curve with Dotted Cross..... (10)

Study and Preparation of GF-5 Phenol-formaldehyde Resin Glue..... (11)

Condensation Polymerization Collection and Biochemical Treatment of the Waste Water from Phenol-formaldehyde Resin..... (13)

Guard Installation for Model A79-1 Planing Machine..... (16)

Coiling Method for Fin Radiator..... (17)

Effects of the Paper Characteristics on Plastic Overlay Laminated Board..... (19)

A Highly Efficient Wood Preservative..... (21)

Improvement of the Returning Conveyor for Steel Plates from the Hot Press..... (23)

Yarding of Chuankou Single Endless Cable Way..... (24)

A Right Angle Yarding in Lowly Concave Mountain Terrain..... (26)

Reduction of Water Consumption for Fiberboard Production and the Treatment of Its Production Waste Water..... (28)

The Chemical Modification of Wood..... (29)

Integrative Management of Sawmill Residue..... (31)

The Successful Reconstruction of Transverse Chain Conveyor in Baisha Allocation Station..... (32)

[No 3, 15 Mar 81 on back cover]

[Text] Condition Analysis of the Tooth Embedded Differential..... (1)

SL-3B Remote-controlled Machine with Radio for Forestry (Part Seven)..... (4)

Operation and Maintenance of YD-ZI Hydraulic Tamping Machine..... (7)

The Irregular Knocking Voice of T-138 Diesel Engine..... (9)

NQ-80 Urea-formaldehyde Resin Adhesive for Chipboard..... (10)

Check and Test of Free Formaldehyde in Chipboard Mill..... (14)

Primary Discussion on Preparation Process of Chipboard Shavings for Furniture Production..... (18)

Use of Electric Carriage Offset on the Bandsaw Hydraulic Drive Carriage..... (20)

Use of Aluminum-plating Steel Pipes for Heaters in a Wood Drying Kiln..... (22)

Desk for Remote Control Chain Saw..... (24)

Sharpening of Saw Chain and Its Cutting Efficiency..... (26)

Modern Technology for the Production of Decorative Veneers in Italy..... (29)

9717
CSO: 4007/500

TABLE OF CONTENTS OF 'LINYE KEJI TONGXUN' NOS 2-3, 1981

Beijing LINYE KEJI TONGXUN [FOREST SCIENCE AND TECHNOLOGY] in Chinese Nos 2 and 3, 1981

[No 2, Feb 81 inside back cover]

[Text] A Preliminary Study of Genetic Gains through Establishment of Seed Orchards and Selection of Geographic Seed Source of Cunninghamia lanceolata..... (1)

Experiment in Growing Hippophae rhamnoides Seedlings on Arid Southern Slopes of Low Hills near a Residential Area at High Elevation.....Xu Yongxu [1776 3057 2485], Forestry Research Institute, Qinghai Academy of Agriculture and Forestry (5)

A New Type of Seedling Container.....Guo Xiuzhen [6753 4423 3791], Wang Zhifeng [3769 0037 1496] and Tan Fei [6223 5481], all of the Institute of Forestry, Chinese Academy of Forestry Sciences (6)

A Preliminary Report on the Experimental Nursery Practice with Taxodium ascendens under Closed Plastic Covers..... Qiu Zongwei [6726 1350 3262], Jiangsu Forestry Sciences Research Institute (7)

On the Development of Container-grown Seedlings in China .....Liang Junrui [2733 0689 3843], Zhou Zhi [0719 4363] and Sun Xiuzhen [1327 4423 3791], et al., all of Heilongjiang Academy of Forestry Sciences; Zhao Kesheng [6392 0344 4939], Forestry Machinery Research Institute, Ministry of Forestry (9)

Investigations of Biological Characteristics of Xanthoceras sorbifolia Related to Pruning.....Forestry Economics Group, Forestry Research Institute, Chinese Academy of Forestry Sciences; et al. (11)

A Preliminary Report of Experimental Storage of Pollen and Induced Germination of Camellia oleosa.....Zhuang Ruilin [5445 3843 2651], Institute of Tropical Forestry, Chinese Academy of Forestry Sciences (15)

Further Study on the Method of Determining the Effects of Farm-protected Shelterbelts..... (18)

The Good Growth of Amorpha fruticosa Planting in Clumps..... (21)

Further Studies on Determining Proper Area of Sample Plots and Number of Dominant Trees while Preparing Site Index Table of Cunninghamia lanceolata.....Si Hongsheng [0674 3163 3932], Planning Institute, Ministry of Forestry (22)

New Application of Concave Grafting.....Liu Yuanzhi [0491 3293 2535], Zhong Chongmao [0112 1504 5399], Wang Bencheng [3769 2609 2502] and Li Dehui [2621 1795 6540], all of the Sichuan Forestry Research Institute; Liu Weijiang [0491 4850 3068], Kuang Dezhong [0562 1795 1813], Shan Shuxiang [0830 2579 7449] and Wang Wenlang [3769 2429 2597], all of Sichuan University (24)

Tentative Manufacture of Industrial Bacterial Powder No uv 17 from Bacillus thuringiensis var dendrolimus.....Fei Chengyu [6316 2052 3558], Changsha Microbiology Research Institute; et al. (28)

Study of the Synthesis and Bioassay of the Informational Chemical Compound Used in Tracking Termites..... (30)

[No 3, Mar 81 on back cover]

[Text] Studies of the Types of Pinus elliottii.....Sun Guangxin [1327 0342 2450] and Lai Tianbi [6351 1131 4310], both of Anhui Institute of Forestry Sciences (1)

A Study of the Breeding of Poplar Hybrids from the Leuce Group.....Wang Shaoyan [3769 4801 8827], Ningxia Forestry Research Institute (4)

Raising Seedlings of Metasequoia glyptostroboides, Taxodium ascendens and T. distichum by Water Cutting of Shoots under Full Light..... (7)

Growing Seedlings on Electric Seed Bed Heater..... (8)

The Techniques for Culturing Young Chestnut Trees for Early Fruitful Production..... (9)

Investigations on Growth Results of Grafting Olea europaea on the O. cuspipata Stocks.....Ye Shaoyi [5509 1321 1837], Yang Weiming [2799 5898 2494] and Zhang Zhizhong [1728 2784 0022], all of the Yunnan Institute of Forestry Sciences (12)

Side Grafting of Walnuts..... (15)

Glyptostrobus pensilis in the Delta of the Zhujiang River .....Xu Yingbao [1776 5391 1405] and Yu Xing [0151 6821], both of the Department of Forestry, South China Agricultural College (15)

A Brief Report of Studies of the Distribution of Some Species of Trees and Shrubs in Northern Da Hinggan Ling and Its Adjacent Areas.....Zhao Guangyi [6392 0342 0308], Northwestern Forestry College (18)

On Selection of Mathematical Models when Compiling the Site Index Curves.....Zhang Tieyan [1728 6993 4291], Liaoning Forest Survey and Design Academy (19)

Control of the Larvae of Holcocerus insularis and Anoplophora globripennis by Injecting Ammonia Water..... (23)

A Preliminary Study of Lymantria dissoluta..... (24)

Foliage Spraying with Terramycin Liquid to Control the Witches' Broom of Paulownia tomentosa at the Seedling Stage .....Huang Zhaoqing [7806 3564 3237], Institute of Forestry, Henan Agricultural and Forestry Academy; et al. (28)

A Nematode-trapping Fungus Detected in Pine Sap..... (29)

A Short Note on Poplar Cultivation in France and Italy..... (30)

9717
CSO: 4007/499

AUTHOR: ZHANG Tianzeng [1728 1131 2582]

ORG: Natural Resources Comprehensive Survey Committee, Chinese Academy of Sciences

TITLE: "Water Conservancy Construction and Pathways of Agricultural Development of North China Plain"

SOURCE: Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese No 7, 81 pp 11-18

ABSTRACT: From Yanshan in the north, Huaihe in the south, Taixingshan foot hills in the west to the eastern seashore, the North China Plain measures a flat 300,000 km^2, aside from some hills in Shandong. It is China's important grain and cotton production bases, with more than 2.7×10^8 mu of land under cultivation and a population of 1.5×10^8. It has suffered, for a prolonged period of time, from damages of drought, flood, and salts, however, which prevent further development of agricultural production. Since the liberation, measures regarding cultivation systems, crop breeds, chemical fertilizer, insecticides, and mechanization , over and above water conservancy and irrigation projects have been practiced,and brought some improvements, but the unit yield remains low, only about 200-300 jin/mu. The dry weather of recent years has caused the problem of water more glaring than ever, and the subject of transferring southern waters to the north, beginning to be proposed

[continuation of NONGYE JINGJI WENTI No 7, 81 pp 11-18]

in the 50's, is again being freshly and urgently debated. This paper asks the question of whether water deficiency is the key and only problem of agricultural production in North China. Conditions of water resources, salinization of soil, irrigated area per capita, unit grain production, conditions of application of organic and chemical fertilizers, condition of soil fertility, the need for protective forests versus the need for firewood, possibilities of auxiliary products, such as silk, and local development of water conservancy construction are analyzed. The question of whether or not the project of transferring southern waters to the north, is to be immediately and urgently implemented, the author maintains, should be evaluated with serious consideration of its effects on the development of the entire national economy and many other factors.

AUTHOR: XIAO Juncheng [5135 0193 1004]

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TITLE: "Strengthening the Study of Agricultural Economics in the Work of Agricultural Regionalization"

SOURCE: Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese No 7, 81 pp 19-21,24

ABSTRACT: Agricultural regionalization is a comprehensive science, involving many fields of geography, agriculture, economics, etc. If the work of agricultural regionalization is to be of good quality, scientists of this work must approach it from all these angles and coordinate them. Of these, survey and research work in agricultural economics is an extremely important aspect. To support this viewpoint, the paper discusses at length problems of economics concerning (1) the utilization of agricultural resources; (2) reasonable structure of agricultural production and regional arrangement; (3) reform and reconstruction of agricultural technology; (4) construction of major bases of crops, forestry, animal husbandry, fishery, and commercial products; (5) regional differences in soil quality and profit and the reasonable distribution system between the state, the collective agricultural bodies; (6) ways of using economic leverage to promote the implementation of agricultural regionalization formulas. Beyond these, applications of boundary theory, the concept of function, the method of linear planning, the analysis of resources utilization, the determination of optimal production structure, and the reasonableness of the degree of specialization, etc. are also briefly mentioned as necessary contents of agricultural regionalization work.

AUTHOR: SUN Xiulu [1327 4423 4389]

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TITLE: "How Did China's State-operated Farms Turn Loss Into Profit"

SOURCE: Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese No 7, 81 pp 38-41

ABSTRACT: After 12 years of continuous operating losses, China's agriculture and reclamation enterprise reported a profit in the past 2 years: 3.97×10^8 yuan for 1979 and 5.36×10^8 yuan for 1980. The following measures are credited by the author for the turnabout: (1) Changes in administrative method and economic management promoted production initiative and positiveness of workers of State-operated farms; (2) Changing single production to multiple enterprise promoted full and reasonable utilization of natural resources and manpower; (3) Agriculture-industry-commerce joint enterprises united the production and economic systems which had been severed in the past; (4) Emphasis on scientific management improved the functions of sciences and technologies. Some details of these measures are mentioned.

AUTHOR: ZHANG Jingyuan [1728 4842 0337]
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TITLE: "Agriculture of Mountainous Regions Should Positively and Steadily Proceed in the Direction of a Transition to Primarily Forestry and Animal Husbandry"

SOURCE: Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese No 7, 81 pp 49-53

ABSTRACT: This paper is a reprint of a paper originally appearing in JINGJI WENTI No 3, 1981 by Shanxi Provincial Research Institute of Social Sciences. The fact that geographically, mountainous and semi-mountainous regions occupy 81 percent of the area of Shanxi and the fact that more than 100,000,000 mu of the province are now barren mountains, deserted slopes, and wasteland but are suitable for afforestation and the deveopment of animal husbandry are the central theme of discussion. Production of commercial products through forestry and animal husbandry in exchange for imported grains is maintained as the solution to problems of low productivity, low standard of living, and lack of food and money in the province. Some policies, such as respecting the autonomy of production teams, reducing the burden of farmers, and training technicians with modern skills of agricultural technology are mentioned as essential for the goal.

6248
CSO: 4009/443

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TITLE: "Model Output Statistics, MOS, Method of Predicting Typhoon Rain andWind"

SOURCE: Beijing QIXING [METEOROLOGICAL MONTHLY] in Chinese No 7, 10 Jul 81 pp 2-5

ABSTRACT: Utilizing the forecast field provided in the WEST PACIFIC TYPHOON PATHWAYS NUMERICAL FORECAST MODEL AND RESULTS OF ITS PRELIMINARY APPLICATIONS (see COLLECTED PAPERS OF THE 1978 TYPHOON CONFERENCE) and some non-model output factors, several statistical maps are composed to serve as the comprehensive elements to establish a forecast equation to predict the wind and rain storms of the typhoon affecting the local area. This is a preliminary attempt of applying the MOS technique at a county level weather station. The arrangement of data and samples, the forecast elements, a correlation analysis of the forecast field, and the forecast equation are explained. The computation result demonstrates that the MOS element occupies a relatively significant portion of the forecast equation, with a clear physical meaning. Numerical forecast--weather analysis--the mathematical statistics method of forecasting is one tendency of development of the forecast work of county stations. With accumulation of experience and data, improvement will come with practice.

AUTHOR: ZHANG Jiacheng [1728 1367 6134]

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TITLE: "The Effect of Polar Ice as a Cold Source and the Monsoon"

SOURCE: Beijing QIXIANG [METEOROLOGICAL MONTHLY] in Chinese No 7, 10 Jul 81 pp6- 8

ABSTRACT: There have been many theories concerning the problem of cold and heat sources of atmospheric circulation. One of these, proposed by a scientist of the USSR maintains that there are 4 heat machines. This conforms with the theory of modern system analysis. His 4 heat machines are: the poles and the tropics constitute the first; the oceans and continents constitute the second; evaporation and condensation of water vapor constitute the third; the uneven distributions of materials such as ozone in the stratosphere constitute the fourth. In reality, only the actions of the first two are taken into consideration in his researches. The present author names the first the planetary heat machine and the second the oceanocontinental heat machine. Following years of graphic analyses, the existence of a third becomes obvious. It is composed of the polar ice as the cold source and the low latitude ice-free region as the heat source. This heat machine has seldom been combined with the first two for analysis, due to mainly its longitudinal distribution, in the same direction as the planetary heat machine and being easily confused for it. This paper is a preliminary investigation of this third heat machine. Some related concepts are also defined and corrected.

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TITLE: "Discussions on Meiyu [Plum Rains] Problems"

SOURCE: Beijing QIXIANG [METEOROLOGICAL MONTHLY] in Chinese No 7, 10 Jul 81 pp 12-14

ABSTRACT: Studies on plum rains, that intermittent drizzles constituting the rainy season of the middle and lower reaches of Changjiang, had a beginning in the 30's, but a more advanced understanding was obtained in the middle 50's when high atmospheric data increased and an overall analysis of the relationship between circulation characteristic of East Asia and the seasonal change became possible. The problem of forecasting plum rains was proposed in the late 50's. Beginning with the No 8, 80 issue and ending with this paper, the journal published a total of 21 papers on the subject. This paper being in the nature of a summation, a note from the editor is attached to announce that the subject is closed for now and no more papers are to be published on it. Problems on the definition of Meiyu or plum rains, the precise determination of the plum rain season every year, and the time of concentration and the time of interruption of the plum rain season are discussed. Different opinions on these problems and the author's own viewpoints are included.

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TITLE: "Some Propositions on Weather Modification in China"

SOURCE: Beijing QIXIANG [METEOROLOGICAL MONTHLY] in Chinese No 7, 10 Jul 81 pp 15-16

ABSTRACT: Since the discovery of the effective cloud seeding agent, dry ice and silver iodide in 1946 in the USA, artificial modification of weather has had 30 plus years of history. At present, the field includes rain-making, hailstorm prevention, artificial reduction of the force of typhoon, fog elimination, and lightning elimination. Most countries, including China, devote most efforts in rain-making and hailstorm prevention, however. In China, weather modification work began in 1958. To date, methodsof cloud seeding, surface launched silver iodide bullets, small rockets, and intra-cloud blast have been extended to all major provinces, cities, and autonomous regions, and contributions of these methods to adversity resistance and guaranteed harvest should be confirmed. In recent years, several tons of silver and a great deal of manpower have been spent every year in these efforts. The paper briefly analyzes the doubtful economic benefits of weather modification expenditure and maintains that the tendency of other countries is to cut back the budget for these efforts, although, in the end, the author agrees with the opinion that in the long run it is a very promising science.

AUTHOR: SHEN Guoquan [3088 0948 5425]

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TITLE: "Equivalent Cumulative Temperature and Its Practical Value"

SOURCE: Beijing QIXIANG [METEOROLOGICAL MONTHLY] in Chinese No 7, 10 Jul 81 pp 23-25

ABSTRACT: As a heat index, cumulative temperature reflects the regional heat resource and the development of crops. It is extensively applied in agricultural meteorology. Studies of recent years demonstrate that stable cumulative temperature varies from region to region, season to season, and year to year. Experiments under controlled conditions and nonlinear temperature models indicate that the cumulative temperature for crops to complete developmental activities and effective cumulative temperature are not constant, under different temperature intensity levels. On the bases of works of Japanese scientists, this paper considers the effectiveness of different temperature levels. The concept of equivalent cumulative temperature and its relationship equations are discussed. The temperature coefficient computation is compared with the stability of the equivalent cumulative temperature. Methods of applying equivalent cumulative temperature are introduced.

6168
CSO: 4009/426

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TITLE: "Further Observations of JBE Attenuated Live Vaccines Used for Prevention of Stillbirths in Swine"*

SOURCE: Beijing WEISHENGWU XUEBAO [ACTA MICROBIOLOGICA SINICA] in Chinese No 2, 1981 pp 174-179

TEXT OF ENGLISH ABSTRACT: 1. Two attenuated JBE live vaccines designated as 5-3 and 14-2 have been used for immunizing sows in early pregnancy. No untoward reaction was noted, and over 90 percent of the newborn piglets from the vaccinated mothers were healthy. These results suggest that these two vaccine strains were safe for the pregnant sows.
2. The serum neutralization antibody conversion rate of both vaccines in vaccinated sows was 80-100 percent, but that of the controls was negative. The vaccine strain 14-2, however, showed much better serum conversion and GMT.
3. The incidence of stillbirths due to infection with JBE spontaneously after

[Continuation of WEISHENGWU XUEBAO No 2, 1981 pp 174-179]

vaccination was significantly decreased, but not in the controls. Only 6.6 - 8.1 percent of newborn piglets from the immunized sows were stillborn, while there were 44.8 - 58.3 percent stillbirths from the controls. In addition, the vaccine strain 14-2 seems to be more potent than when the vaccine was diluted to 10^{-3}, however, this still provided good protection.

* Under the direction of LI Hemin [2621 3109 3046].

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TITLE: "Studies on the Techniques of Seed-potato Production. III. The Preparation of Antisera against Potato Virus Y and Methods of Diagnosis"

SOURCE: Beijing WEISHENGWU XUEBAO [ACTA MICROBIOLOGICA SINICA] in Chinese No 2, 1981 pp 208-213

TEXT OF ENGLISH ABSTRACT: A partially purified preparation of potato virus Y was obtained by extraction with 0.1 M tris-HCl buffer, pH 7.0, containing 0.05 M EDTA or 0.5 M phosphate buffer, pH 6.5, and precipitation with 4 percent polyethylene glycol and one or two cycles of differential centrifugation. After PEG precipitation the pellet was resuspended in 0.01 M phosphate buffer containing 0.5 M urea for dispersion of aggregated viruses. This resuspended medium effectively prevented virus aggregation and usually produced higher yield of the virus.

[Continuation of WEISHENGWU XUEBAO No 2, 1981 pp 208-213]

This preparation was used to immunize rabbits through three successive intramuscular injections of virus suspension emulsified in Freund's complete adjuvant in three weeks. The antisera had titers of 1:2560-5120 as determined by means of the micro-precipitin test.

The later polystyrene particles were sensitized with purified r-globulin fraction from this antisera and the sensitivity of the test was determined. The minimum amount of 1.52 - 2.2 μg/ml purified PVY can be determined by this method.

The antisera have been used for the detection of infected sprouts and leaves of potatoes by micro-precipitin and micro-agglutination tests in comparison with local-lesion hosts S. demissum and P. floridana. The micro-agglutination tests were efficient and practicable.

Prepared antisera have been used for diagnosis of virus diseases in seed-potato production in Nei Monggol Autonomous Region since 1978.

9717
CSO: 4009/385

Veterinary Science

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TITLE: "Experiment With Amprol Plus for the Prevention and Control of Eimeria Disease of Chickens"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 7, 81 pp 1-5

ABSTRACT: In China Eimeria disease often causes death of large number of chicks; and there had been no special drug to combat it until recent years when Zoaline (North China University of Agriculture, 1977) and Robenidene (Research Institute of Animal Husbandry and Veterinary Medicine Shanghai Municipal Academy of Agriculture, 1978) were reported. They remain less than satisfactory. This paper reports an experiment with Amprol Plus, a product of the USA drug manufacturer MSD Company. It contains the 2 anti-Eimeria drugs of Amprolium and ethopabate. The drug, Robenidene (produced by Hubei Provincial Research of Pharmacology) is used as the control, and ovular sacs, supplied by 5 chicken farms of the Lanzhou Region used in the

[continuation of SHOUYI KEJI ZAZHI No 7, 81 pp 1-5]

experiment are identified to be 18 percent E. tenella, 11 percent E. brunetti, 8 percent E. maxima, 4 percent E. necatrix, 22 percent E. mivati; some E. acervulina, E. hagani, E. mitis, and E. praecox are also found. Amprol Plus and the control drug are mixed in the feed in doses of 63 ppm to 1000 ppm for continuous feeding lasting 20 to 60 days for the various groups. Control groups of infested and healty chickens fed with feed free of drugs are also established. Results demonstrate that at a dose of 125 ppm of Amprol Plus infestation of Eimeria of mixed species may be prevented and the effect of 250 ppm of this drug is even better. The drug produces no toxic reaction in chickens after continous feeding of 60 days with a dosage of 250 ppm or 20 days with 1000 ppm. Amprol Plus is found to be without effect for controlling E. maxima and E. brunetti, however. Comparing the 2 drugs, the anti-Eimeria strength of Amprol Plus is proved to be poorer than Robenidene. Robenideneis a broadspectrum anti-Eimeria drug and is highly effective for controlling the production of ovular sacs of Eimeriidae.

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TITLE: "Research on the Treatment of Japanese Fluke Disease of Goats With Pyquinone"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 7, 81 pp 5-7

ABSTRACT: Antimony agents have for a long time been regarded as the method for the treatment of fluke in men and animals, but they are very toxic and unsafe to use. Related domestic organizations have synthesized a nitro-sulfur cyanamide drug and pyquinone. Experimental results have proved them to be highly effective and of low toxicity. As subtitutes for stibinic drugs, they are very promising. The authors had established a procedure of using the nitro-sulfur cyanamide drug to treat schistosomiasis of water buffalo and goat, while a subsequent experiment proved that pyquinone is just as effective at half the dose. For the purpose of establishing a low dosage, safe, and effective procedure of treating goat schistosomiasis with pyquinone, the experiment, reported in the paper, is carried out. For the

[continuation of SHOUYI KEJI ZAZHI No 7, 81 pp 5-7]

treatment of artificially infested goats, which are introduced from non-epidemic regions, one dose of pyquinone by mouth of 60 or 40 mg/kg of body weight produced 100 percent reduction of parasite content in feces; the rate of reduction of the 20 mg/kg group was 99.8 to 100 percent; no obvious effect was observed from the 10 mg/kg and the 5 mg/kg groups.

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TITLE: "Observation of Analgesic Effects of Helium-neon Laser Irradiation on Nervi Mediani, Tibialis, and Infraorbitalis of Yellow Oxen"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 7, 81 pp 24-27

ABSTRACT: On the basis of a previous successful experiment of using helium-neon laser irradiation to produce analgesic effects on horses, this experiment is carried out on yellow oxen to compare the similarities and differences. Anodes soaked with 10 percent potassium chloride are attached around the anus of the ox to form the pain threshold tester, and needls puncture reaction and experimental surgery are also used to determine the analgesic effect. The ox is strapped on the surgical table, and 6mW x 2 helium-neon is aimed at the nerves from a distance of

[continuation of SHOUYI KEJI ZAZHI No 7, 81 pp 24-27]

of 50-60 cm. Results reveal that following irradiation, the pain threshold is obvicusly raised. Pain reactions to needle puncture at 14 points of the body are obviously dulled or disappear completely. Irradiation of ox nervi tibialis and infraorbitalis with helium-neon laser does not produce as good analgesic effects as the nerves of horses, however. About half of the oxen have various degrees of pain reaction when the skin is cut.

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TITLE: "Digital Joint Fusion Technique"

SOURCE: Lanzhou, SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 7, 81 pp 47-49

ABSTRACT: If a joint fracture occurs to an equine animal due to the action of certain violent force, the soft tissues of that joint may fester or become necrotic as a result of high temperature, further injury, infection, etc. This is a very difficult condition to treat. In clinical experimentation, they authors apply plastic surgery to destroy the surface of the joint first and to cut ends flat before the 2 bones are joined together and fixed in a plaster cast. After healing, the 2 bones become one and the joint in fact no longer exists. When digital joints of equine animals are thus treated, walking and weight-carrying ability of the animals is not greatly affected. With some training, their function may be restored. The paper describes the surgical procedure and gives the case history of one mule to illustrate the effectiveness of the treatment.

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TITLE: "Trace Element Contents of Pig Liver in Parts of the 4 Provinces (Cities) of Shanxi, Hebei, Shandong, and Tianjin"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 7, 81 p 54

ABSTRACT: The level of trace elements in the body of animals is the important basis for diagnosing trace element disease and the fundamental data for devising reasonable supplemental feed. It is closely related to trace element contents of the soil, water, and hay of a locality. The liver is the important metabolic organ of trace elements and the contents basically reflect the state of the various trace elements. In 1979, the authors carried out a survey of trace element diseases of animals in the Northeast. The present paper is a continued study. The iron, copper, manganese, zinc, cobalt, molybdenum, and selenium contents (ppm of dry weight) of pig livers tested are presented in a table in the paper.

6248
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JPRS 78939

9 September 1981

China Report

AGRICULTURE

No. 163

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JPRS 78939

9 September 1981

CHINA REPORT

AGRICULTURE

No. 163

CONTENTS

PEOPLES REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

Potential To Develop Livestock Production Called Great
(Shen Tongsheng; RENMIN RIBAO, 11 Jun 81)..... 1

Responsibility System Brings Lankao County Increased Grain Output
(RENMIN RIBAO, 19 Jun 81)..... 4

Briefs
Private Plot Afforestation 6
Rapeseed Output 6
Seed Strain Equipment 6
Country Fairs 6

Anhui

Briefs
Luan Prefecture Forestry 7
Suxian Prefecture Cotton 7
Guzhen County Cereal Crop 7
Early Rice Harvest 7

Fujian

Working Conference Stresses Adapting Farm Machinery to New Situation
(FUJIAN RIBAO, 10 Jun 81)..... 8

Specfalists Go To Regions Affected by Rice Blast
(Nong Jicai; FUJIAN RIBAO, 11 Jun 81)..... 10

Good Situation for Production, Sales of Farm Machinery Seen
(FUJIAN RIBAO, 10 Jun 81)..... 11

Briefs
Longxi Prefecture Rice 13
Zhangpu County Peanuts 13
Longxi Prefecture Crops 13
Putian County Crops 13
Vegetable Supply 13
Water Conservancy 14
Putian Spring Grain Procurement 14

Guangdong

Briefs
Forestry Conference 15
Rice Scientific Research 15
Summer Grain Procurement 15
Hainan Relief Work 15
Negotiated Grain Prices 16

Guizhou

Water Conservancy Facilities Implement Management Responsibility System
(RENMIN RIBAO, 7 Jul 81)..... 17

Briefs
Conference on Forestry 18

Hebei

Farm Villages Fight Drought, 190,000 Mu of Late Fall Crops Not Sown
(BEIJING RIBAO, 25 Jun 81)..... 19

Briefs
Summer Grain Procurement 20
Hebei Summer Grain Production 20
Beijing Summer Grain 20
Summer Grain Procurement 20

Heilongjiang

Briefs
Beet Production 21
Timber Production 21
Flax Output 21
Sugar Industry 21

Henan

Wheat Put on Market To Stabilize Food Grain Prices
(RENMIN RIBAO, 20 Jun 81)..... 22

Underground Granaries Used, Results Good
(GUANGMING RIBAO, 27 Jun 81)..... 23

Briefs
Summer Grain Procurement 24

Hubei

Briefs
Hubei Rain 25
Rapeseed Harvest 25

Hunan

Briefs
Drought Worsening 26

Jiangsu

Jiangning's 'Companion Planting of Rice in Seedbeds' Demonstrated
(XINHUA RIBAO, 19 Jun 81)..... 27

Briefs
Field Management 28
Farmland Irrigation 28
Early Rice 28
Late Rice 28

Jiangxi

Briefs
Early Rice 29
Rice Harvest 29
Peanut Production 29
Rice Harvest 29
Citrus Fruit Production 30

Jilin

Commercial Food Grain Bases Developing
(RENMIN RIBAO, 6 Jul 81)..... 31

Briefs
Crop Acreage 33

Liaoning

Briefs

Livestock Products 34
Agricultural Loans 34
Vegetable Sowing 34
Manure Collection 34

Nei Monggol

Briefs

Livestock Production 35
Grassland Increase 35
Buckwheat Production 35

Qinghai

Briefs

Flood Warning 36

Shandong

Briefs

Cotton Strain Awarded Prize 37

Shanghai

Briefs

Grain Procurement 38

Sichuan

Briefs

Torrential Rainstorms 39

Xizang

Briefs

Water Conservancy Conference 40

Yunnan

New Form of Responsibility System Reported
(YUNNAN RIBAO, 6 Jul 81)..... 41

Commentary on Introduction of New System
Luchun County's Experiences, by Fan Zhengbao
Quota Contracting With Zhuang, Miao Nationalities,
by Weng Wenliang, Lan Zhengyu

Briefs
Flue-Cured Tobacco Production 47
Agricultural Information Conference 47

Zhejiang

Briefs
Grain Sales 48

II. PUBLICATIONS

Table of Contents of 'ZHIWU SHENGLI XUEBAO' No 2, 1981
(ZHIWU SHENGLI XUEBAO, May 81)..... 49

Table of Contents of 'XUMU SHOUYI XUEBAO' No 2, 1981
(XUMU SHOUYI XUEBAO, May 81)..... 52

Table of Contents of 'DONGWU XUEBAO' No 2, 1981
(DONGWU XUEBAO, Jun 81)..... 54

Table of Contents of 'ZHONGGUO XUMU ZAZHI' No 3, 1981
(ZHONGGUO XUMU ZAZHI, 5 Jun 81)..... 57

Table of Contents of 'QIXIANG' No 6, 1981
(QIXIANG, 10 Jun 81)..... 59

I. GENERAL INFORMATION

POTENTIAL TO DEVELOP LIVESTOCK PRODUCTION CALLED GREAT

Beijing RENMIN RIBAO in Chinese 11 Jun 81 p 5

/Article by Shen Tongsheng /4141 1749 4563/ of the Jiangsu Provincial Academy of Agricultural Sciences: "The Idea of 'Macrocosmic Livestock Production' Must Be Established"/

/Text/ The potential to develop livestock production in our nation is very great. At present, the land is far from being fully utilized and the materials are far from being fully utilized. In developing livestock production, I believe the following two ideas and understanding still need to be clarified and unified.

One is the idea that we often hear about, the so-called "that which is suited for farming should be used for farming, that which is suited for forestation should be afforested, that which is suited for livestock production should be used for livestock production." Of these statements, the first two are correct, but the proposal that "that which is suited to livestock production should be used for livestock production" contains only some truth. This is actually a theory that excludes livestock production from the forest areas and farming areas, limiting it only to the livestock regions or the grassland regions. In the world, wherever plants can grow, livestock can be raised and livestock production can be developed. For example, in forest areas--as long as they are not nurseries and young forests, as long as green grass suitable for feed is grown at the same time--livestock can be raised. The value of sparse forest regions as grazing fields is even higher than good grassland. The livestock raised can in turn fertilize the forests, promote the growth of trees, benefiting both forestation and livestock production. Even in crop regions, besides the feed and grazing grass and green manure crops of rotation crops and companion planted crops which can be used to feed livestock, the chaff, husk, bran, refuse, hull, paste, cake and dregs of rice left over after processing of agricultural products can all be used as feed for livestock. It is common knowledge that grassland and grass mountains can be used for livestock raising and water regions can be used to raise aquatic products. Around cities, waste foods and leftovers from slaughter and the wastes of the foodstuff industry can all be utilized to develop hog raising, chicken raising and milk cows. It can be seen that livestock production is suitable for all places. Crop regions are especially the largest base for livestock production. At present, over 95 percent of meats and 100 percent of eggs in our nation are supplied by these regions. Therefore, we should establish the viewpoints of "macrocosmic agriculture" and "macrocosmic food grains" and also the concept of "macroscopic livestock production." The goal of "macrocosmic agriculture" and "macrocosmic food grains" can be reached only when livestock production is emphasized by all localities of the entire nation and when it is developed.

The second is the thought of being afraid that the people will become "fat." There are such theories that the superior tradition of foods of our nation's people must be retained (actually it is a tradition of vegetables and rice), that the crooked road of foreigners must not be followed, our nation's people must guard against becoming overly fat, the increase in cardiovascular diseases must be guarded against, etc. Comrades holding such views at least have removed themselves far away from the actual situation in China. At present, our nation's people consume an annual average of less than 24 jin of meats. In many localities, farmers consume far less than this amount because of various reasons. If our nation's present livestock production developed at its ordinary rate, then by the year 2000, each person in the nation will only be able to eat 1 liang 4 qian of bones with meat on it, and will only be able to eat two eggs in 3 days. Then, what we must first worry about for the broad masses of people is not the problems of obesity and cardiovascular diseases but the problems of deficiency of protein and other nutrients.

After the hindrance of these two understandings is clarified, we will see that the future for the development of livestock production in our nation is very broad. The key to livestock production is the problem of feed. There are many ways to conserve and open up the sources of feed. First, we can utilize a part or most of the 200 million tons of stalks that we use directly as fuel and burn away each year, process them to increase their nutritional value and use them first as feed, and then use the excretion of livestock to manufacture machine gas, then use methane dregs to fertilize the fields. The effectiveness of fertilization is better than barnyard manure. Secondly, rotation planting and companion planting of various grazing grasses and green manure crops can be popularized. They can similarly be used as feed first, and the excretion of livestock can then be used to fertilize the fields in the form of methane gas. In addition, our nation now still buries some 10 billion jin of various kinds of oil cakes as fertilizers into the ground each year. The various oil cakes contain between 30 and 40 percent protein. This is the same as directly burying 3 billion to 4 billion jin of protein into the ground. At a time when our nation's supply of protein is not abundant, this is an intolerable waste. Of such massive amounts of oil cake, the nontoxic ones can be used directly as feed for livestock. The toxic ones can be used as feed after detoxication. Just combining the three items above means that all three types of feed, coarse feed, green feed and fine feed exist, and the amount which can be fed to herbivorous livestock is plentiful. These are just some simple measures to combine agricultural and livestock production. They do not need a lot of investment, do not need to introduce technology and equipment and can produce results in using agriculture to support livestock production and using livestock production to promote agriculture.

In addition, the over 3 billion mu of grasslands in the north have a great potential for improvement. If the large areas of grass mountains in the south are replanted with suitable grazing grass, they can produce a massive amount of livestock products. Also, there is the utilization of inland water surfaces and coastal beaches, collection and processing of massive amounts of small fish, small shrimps, small crabs, small clams thrown away each year, development of monocellular protein feed and other protein feeds, development of the feed additives industry and the mixed feed industry, etc.

Compared to the levels of advanced nations with a developed livestock industry, the possibility of improving our nation's livestock industry is great. For example, improvement of varieties, utilization of heterosis, improvement of management of

raising livestock and the method of management, gradual use of livestock machinery, implementation of measures to prevent disasters and prevent diseases, popularization of new techniques, etc. All aspects must progress together and by the end of this century, it is entirely possible to increase the production value of our nation's livestock industry as a proportion of the total production value from the 14 percent at present to 40 percent. By that time, the composition of food of our nation's people will be truly improved, the need for protein can gradually be satisfied, the nutritional level will visibly increase and the health of the people will greatly increase.

9296
CSO: 4007/494

RESPONSIBILITY SYSTEM BRINGS LANKAO COUNTY INCREASED GRAIN OUTPUT

Beijing RENMIN RIBAO in Chinese 19 Jun 81 p 1

/Article: "Responsibility System Brings Lankao County Farmers Great Happiness; Victory Over Severe Drought Not Seen in Past 50 Years; Seizing Highest Yield of Wheat in History"/

/Text/ Zhengzhou 18 June--NCNA reporters Huang Shaoliang /7806 1421 5328/ and Liu Kuihua /0491 5525 5478/ report: The responsibility systems of contracting production to the family and contracting cadres to the families have manifested their power in Lankao County in Henan Province. The entire county won over the especially severe drought not encountered in the past 50 years. This year's total yield of wheat has surpassed the level of 1980, the highest in history.

Beginning in 1979, 90 percent of the production teams in Lankao County implemented the production responsibility systems of contracting production to the family and contracting cadres to the families. The total yield of food grains of the entire county that year showed an increase of more than 20 percent over 1978, and the situation of being a county deficient in food grains for 23 years was changed. In 1980, this county encountered drought, low temperatures and insect pests. The total yield of food grains of the entire county still showed an increase of over 10 percent over the previous year, surpassing the highest level in history. From the time of planting wheat last year to the time of harvesting wheat this year, over 20 small rains occurred over an 8-month period. The accumulated amount of rainfall was less than 50 millimeters, and with the early arrival of strong dry hot winds which occurred many times and lasted for a long time, an extremely severe drought not encountered in the past 50 years occurred, but the total yield of wheat of the entire county still showed an increase of 5 percent over last year.

The agricultural production responsibility system has fully mobilized the strength of the collective economy and the enthusiasm of the masses of farmers, water conservancy facilities were fully utilized, and there were new developments. The collective and the commune members pooled their funds to buy various farm machinery. The entire county irrigated 380,000 mu of wheat fields enabling the wheat to return green, an increase of 130,000 mu over last year, 330,000 mu of fields were irrigated for filling of wheat, an increase of over onefold over last year. Therefore, in a year of severe drought, a bumper harvest of wheat was assured. Many commune members said, in this year's wheat production, "the disastrous situation is discouraging but there was happiness after harvesting and threshing and the responsibility system

demonstrated its glory!" Premier Zhao Ziyang inspected the Yuzai Brigade of Chengguan Commune last winter. Many families had not had any surplus for 30 years. In 1976 alone, the entire brigade consumed 360,000 jin of food grains of planned sales. In 1979, after implementing contracting production to the family, the situation changed and every family now has surplus food grains. The family of old farmer Liu Tinghe of the Fifth Production Team visited by Premier Zhao consists of eight family members. Now they have 2,000 jin of stored food grains; this summer, they harvested 6,000 jin of wheat, an increase of onefold over last year.

9296
CSO: 4007/494

BRIEFS

PRIVATE PLOT AFFORESTATION--Beijing, 23 Aug (XINHUA)--Since the issuance of the "Decision on Certain Questions on Forestry Production and Development" made by the CCP Central Committee and the State Council on 8 March, 1981, party committees and people's government of 19 provinces, municipalities and autonomous regions, including Beijing, Liaoning, Hebei and others, have made efforts to implement the decision. The forestry right certificates have been issued on a trial basis in 23 provinces, municipalities and autonomous regions. Private plots on hilly land, with a total area of some 10 million mu, have been allotted to 2.7 million households in 9 provinces, municipalities and autonomous regions, including Beijing, Fujian, Liaoning, Shanxi, Guangxi, Hunan, Guizhou, Henan and Shaanxi. In Shanxi and Shaanxi provinces, commune members have completed afforestation on 1.43 million mu of private hilly plots. Various responsibility systems in forestry production have been established in various localities throughout the country. [Beijing XINHUA Domestic Service in Chinese 0141 GMT 23 Aug 81 OW]

RAPESEED OUTPUT--Hufei, 26 Aug (XINHUA)--Rapeseed is being grown on 10 million mu of winter fallow cropland in eight provinces in northern China, according to a meeting on studying rapeseed production in northern China. According to estimates, the total rapeseed output in the eight provinces in northern China, namely Hebei, Shanxi, Jiangsu, Anhui, Shandong, Henan, Shaanxi and Gansu, will exceed 908 million jin this year. Because of additional rapeseed output from the winter fallow land, the peasants in the eight provinces will have an additional income of over 369 million yuan, plus 540 million jin of cake fertilizer. [Beijing XINHUA Domestic Service in Chinese 0058 GMT 26 Aug 81 OW]

SEED STRAIN EQUIPMENT--The recently held national conference on processing and selecting seed strains proposed that small machinery for seed selection should be manufactured from now on to meet the demands in the rural areas. Machinery for seed selection has been in use in China since 1978. Experiments show that the machine-selected seed strains yield a higher output of some 5 percent per mu than seeds selected manually. [Beijing Domestic Service in Mandarin 1200 GMT 24 Aug 81 OW]

COUNTRY FAIRS--Beijing, 21 Jul (XINHUA)--Country fairs have developed rapidly throughout China. Transactions at the fairs increased by 30 percent in the first half of 1981 compared with the same period last year, while prices at country fairs increased by 5 percent. However, prices for grain and cooking oil dropped 3 and 5.58 percent, respectively. [Beijing XINHUA Domestic Service in Chinese 1228 GMT 21 Jul 81]

CSO: 4007/558

BRIEFS

LUAN PREFECTURE FORESTRY--There are more than 1.73 million mu of economic forests in Luan Prefecture, Anhui, of which about 40 percent is in a state of waste and neglect. Efforts are being made to reforest these lands. So far 137,800 mu have been reforested in Jinzhai, Huoshan, Shucheng and Luan counties. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 3 Aug 81]

SUXIAN PREFECTURE COTTON--The more than 870,000 mu of cotton in Suxian Prefecture, Anhui, is growing well despite a 2-month-long drought that hit the northern counties in the prefecture since late April. [OW111239 Hefei Anhui Provincial Service in Mandarin 1100 GMT 8 Aug 81]

GUZHEN COUNTY CEREAL CROP--Guzhen County in Anhui has reaped an unprecedented bumper harvest of summer grain this year. The county's total wheat output has reached 210 million jin, averaging 295 jin per mu and 520 jin per capital. By the end of July, the county had already sold 38 million jin of wheat to the state. [OW170455 Hefei Anhui Provincial Service in Mandarin 1100 GMT 15 Aug 81]

EARLY RICE HARVEST--Anhui Province has reaped a good early rice harvest this year from 10.7 million mu of early rice fields. The early rice acreage was reduced by 1.05 million mu this year. However the total early rice output increased by 400 million jin or 5.7 percent over the last year to an all-time high of 7.29 billion jin. This year's per-mu early rice yield of 681 jin is 93 jin higher than last year's. [OW150302 Hefei Anhui Provincial Service in Mandarin 1100 GMT 11 Aug 81]

CSO: 4007/560

WORKING CONFERENCE STRESSES ADAPTING FARM MACHINERY TO NEW SITUATION

Fuzhou FUJIAN RIBAO in Chinese 10 Jun 81 p 1

[Article: "Farm Machinery Work Must Adapt to the New Situation in Farm Villages; The Province Holds Farm Machinery Working Conference to Study and Arrange Future Work"]

[Text] The provincial farm machinery working conference that ended in Fuzhou on 5 June emphasized that farm machinery work must adapt to the new situation of change in our province's farm villages to better serve agriculture (agriculture, forestry, livestock production, sideline production, fishery), to serve light industry, to serve the market, to serve the development of exports of farm machinery products.

During the conference, the leading comrades of the provincial committee spoke. The leading comrade of the provincial committee pointed out that after the farm villages implemented the production responsibility system, agricultural production was enlivened, diversification developed, and farmer's income increased. Therefore, the need for agricultural machinery and the purchasing power increased as well. At present, supply of hand tractors, threshers and such agricultural machinery has already lagged behind demand, the supply of medium and small farm machinery products cannot meet demands. This shows that as agricultural production develops, the demand for farm machinery by the broad numbers of farm villages did not decrease, but increased. This also shows that the agricultural production responsibility system is a stimulus for agriculture and it is also a stimulus for agricultural mechanization, not a hindrance. But, because the productive system is small, large agricultural machinery is unsuitable. This requires farm machinery work to adapt to the new situation of this change. It must produce more medium and small agricultural machinery that suit the demands of the market, and produce less large farm machinery products so that the needs of the broad number of farm villages can be satisfied.

The leading comrades of the provincial committee pointed out that farm machinery work must expand its service. In the past, agricultural mechanizations was unilaterally understood as mechanization of food grain production and thus we tied our hands and feet. Agricultural production is not only food grain production, it is also diversification. A greater amount of agricultural machinery is needed for diversification. Generally speaking, agriculture includes farming, forestry, livestock production, sideline production and fishery. This means, agriculture, forestry, livestock production, sideline production, fishery, diversification,

commune and brigade enterprises, etc., are all targets to be served by agricultural machinery work. Therefore, the market for agricultural machinery is very broad and agricultural machinery work has a bright future. The question is whether our service is good or not.

The leading comrade of the provincial committee pointed out, to enliven agricultural machinery production, we must develop the superiority of our province which has many overseas Chinese to open up exports. The potential for exporting farm machinery from Fujian is great. The level of agricultural production of the Southeast Asian nations is very similar to ours, our medium and small agricultural machinery is suitable for these nations. One is the hand tractor, one is the diesel engine, one is the water pump, grasping these three or four products, we can open up the situation. But the first product must be suited to the demands, the second must have full sets of accessories, the third must have good quality, the fourth point is that the price must be cheap, the fifth is that the spare parts must cover the full range, the sixth is the supply of the merchandize must be in time, the seventh is that advertising must be placed first, and the eighth is that service must be detailed. Doing these eight points will enable us to open up export markets. After export work is done well, the entire agricultural machinery work will be enlivened.

The leading comrade of the provincial committee emphasized by pointing out that to enliven the production of farm machinery, management of farm machinery and product sales and marketing, we must implement many forms of the economic responsibility system. The responsibility system generally speaking is described by the word "contract". Practice proves that "everything works by contract." Each locality has contracted the hand tractor to the tractor operator and the results are generally good. The agricultural machinery production plant, the tractor station, the farm machinery company and the farm machinery bureau cadres must all implement the economic responsibility system. Only by mobilizing the enthusiasm of the state, the enterprises, the communes and brigades and the producers, and only by taking into consideration the benefits of all sides can farm machinery work become alive.

9296
CSO: 4007/491

SPECIALISTS GO TO REGIONS AFFECTED BY RICE BLAST

Fuzhou FUJIAN RIBAO in Chinese 11 Jun 81 p 1

[Article by Nong Jicai [6593 6060 6299]: "Agricultural Specialists Go to Area Affected by Blast of Rice Disease"]

[Text] This year, blast of rice disease of early rice in our province has occurred early, developed quickly, the area covered is large, and the threat to early rice is serious. At present, it is the time when double season early rice is opening and heading, it is a time when paddy rice is most easily affected by panicle neck blast disease. To win the battle of preventing blast of rice disease and to assure a bumper harvest of early rice, the provincial agricultural committee has organized the specialists, scientific and technical personnel and cadres of the provincial agricultural department, the academy of agricultural sciences and the provincial agricultural capital company into five groups. Yesterday, they went to the five regions of Sanming, Longyan, Jinjiang, Longxi, Ningde to survey the situation and help these regions do the work of preventing blast of rice disease well.

9296
CSO: 4007/491

GOOD SITUATION FOR PRODUCTION, SALES OF FARM MACHINERY SEEN

Fuzhou FUJIAN RIBAO in Chinese 10 Jun 81 p 1

[Article: "A Good Situation Emerges in Our Province's Production and Sales of Farm Machinery; During the First Four Months of This Year, a Total of Nearly 6,000 Units Have Been Produced, But Still the Supply Cannot Satisfy Demand"]

[Text] During the previous period, some people worried that after the responsibility system is established in farm villages, especially after implementing contracted production to the group, to the laborer and to the family, the farmers will not need farm machinery. Recently, the situation reflected at the provincial farm machinery working conference showed: the production and sales of farm machinery this year in our province have been much better than expected, and a good situation that is rarely seen has emerged.

Last year, a down trend occurred in our province's farm machinery system and products accumulated. At the time, some people believed that in the future farm machinery should not be produced. The inventory can last for 2 years without being depleted. But, what is the situation now? As the production responsibility system in farm villages was implemented, the enthusiasm of the farmers to buy agricultural machinery was very high and the situation was bullish. According to statistics, from January to April, a total of nearly 6,000 hand tractors were sold throughout the province, the inventory was completely sold, and this year, another more than 3,000 units were produced but the supply could not satisfy the demand. Many plants producing hand tractors saw waiting lines for their products. Greater increases of other small farm machinery and tools such as small horsepower diesel engines, machine tilling vessels, hand push carts, small trailers, dryers, oars for boats and various maintenance accessories were also realized. The seeder is popular among communes and brigades where there is a smaller labor force and where there are more land and more sidelines. It can be sold. After the Shuidong Brigade of the Chengguan Commune in Jianyang County implemented the responsibility system of contracting production to the family, commune members bought 20 new fertilizer machines, an average of one unit per five families. Comrades of the Quanzhou atomizer plant said, the situation in the farm villages is changing drastically. Our ideological preparation was insufficient at first--there were many hand operated atomizers left in warehouses last year and they could not be sold. This year, they are in demand everywhere, farmers come every day wanting them, the inventory has been completely sold, and market forecasts indicate 300,000 units more are needed.

At present, the inventory of farm machinery throughout the province has dropped from the 120 million yuan in 1979 to 8 million yuan.

The situation in the farm villages is good, the purchasing power of farmers is high, and the production of farm machinery has become alive. Some of the original enterprises that "were poor" are now seeing better days. From January to April of this year, the entire province's farm machinery sector completed a total industrial value of over 40 million yuan, surpassing the value of all the contracts signed at the end of last year at the Changle purchasing orders conference. Quanzhou Farm Machinery Plant originally had contracts for products for the entire year worth 50,000 yuan. During the first 4 months of this year, contracts worth 810,000 yuan have been signed. Planned production of hand tractors throughout the province this year is 6,000 units. From January to April, 3,680 units have been completed, constituting 61 percent of the annual plan. During the first half of last year, hand push carts were difficult to sell, this year, they have become hot items, now, nearly 100,000 units have been completed, an increase of over twofold over the same period last year.

9296
CSO: 4007/491

BRIEFS

LONGXI PREFECTURE RICE--Longxi Prefecture this year achieved an all-time high in early rice output. On the 1,586,000 mu of early rice already harvested in the prefecture, the average per-mu yield is 673 jin, or 37 jin more than in the same period last year. The prefecture's total early-rice output may reach 1.17 billion jin, or 30 million jin more than in the same period last year. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 2 Aug 81]

ZHANGPU COUNTY PEANUTS--Zhangpu County, Fujian, harvested 25.62 million jin of peanuts this year, an increase of 7.2 percent over the past year. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 4 Aug 81]

LONGXI PREFECTURE CROPS--Fuzhou, 7 Aug (XINHUA)--Despite adverse weather conditions, Longxi Prefecture, Fujian, achieved an all-round good harvest in the first half of the year. The prefecture's total summer grain output increased by about 30 million jin, the per-mu summer grain output by 40 jin, the total rapeseed output by 100 percent and the aquatic products output by 25 percent over that in the same period last year. In spring this year the prefecture afforested 378,000 mu, fulfilling 90 percent of the yearly target. [Beijing XINHUA Domestic Service in Chinese 0105 GMT 7 Aug 81]

PUTIAN COUNTY CROPS--Putian County, Fujian Province, lost more than 5 million jin of grain of its expected harvest of early season crops due to a cold spell in May and plant diseases and pests. The county now plans to make up for the loss by strengthening management of its double-crop late-maturing rice, stepping up fertilizer application of the 220,000 mu of single-crop late rice and stepping up disease and pest control. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 8 Aug 81]

VEGETABLE SUPPLY--According to FUJIAN RIBAO, the vegetable supply in Fuzhou Municipality was reduced markedly since it was hit by typhoon No 7 on 20 July. To cope with the situation, the Fuzhou municipal CCP Committee and the municipal people's government have adopted various measures such as strengthening management of vegetable plots and buying vegetables from other localities. Vegetable supply in the city is expected to improve in the latter half of August. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 10 Aug 81]

WATER CONSERVANCY--The Fujian provincial meeting on the management of water conservancy closed 25 August. The meeting held that the major current task is to strengthen management and bring into full play the role of existing water conservancy projects as instructed by the central authorities. Over the past 31 years since the founding of the People's Republic, Fujian Province has built a large number of water conservancy works, which basically can overcome floods and drought and ensure industrial and agricultural production. (Wen Xiushan), Standing Committee member of the Fujian Provincial CCP Committee and director of the provincial agricultural commission, addressed the closing ceremony. [OW270511 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 26 Aug 81]

PUTIAN SHRING GRAIN PROCUREMENT--Up to yesterday, the Putian area completed the task of uniform procurement of spring food grains of 2.86 million jin as of yesterday, surpassing the original plan by 2.3 million jin. The food grains department acted according to the situation which has emerged after implemention of the production responsibility system in farm villages and did not count the amount in procurement, received all incoming grains as they arrived, and the quality of spring food grains warehoused was all better than past years. [Text] [Fuzhou FUJIAN RIBAO in Chinese 11 June 81] 9296

CSO: 4007/491

BRIEFS

FORESTRY CONFERENCE--Guangdong Province will vigorously grow quick-growing and high-yield trees to speed up the development of timber production. The provincial forestry department recently held a conference in Lianshan County on growing quick-growing and high-yield trees. The quick-growing and high-yield forestry will be based on the standard of the national China fir production areas. That is to say, average output of China fir is 1 cubic meter a year. The conference held that the province has favorable conditions for growing quick-growing and high-yield trees, particularly China fir trees. The province has decided to invest 2 million yuan this and next year in 100,000 mu of quick-growing and high-yield trees in 18 counties, including Lianshan, Liannan, Lian, Lechang, Longchuan and Gaozhou. [HK180543 Guangzhou Guangdong Provincial Service in Mandarin 0445 GMT 16 Aug 81]

RICE SCIENTIFIC RESEARCH--The Chinese Academy of Agricultural Sciences has organized a scientific and technological group to investigate the cultivation of early-rice seeds in the southern rice area of the country. After conducting investigation in Guangdong Province, the scientific and technological group recently put forth its opinions on the scientific research in paddy rice in the province. It demanded that close cooperation of all scientific research units and all professions in the province be strengthened and new and better superior rice seeds be selected and cultivated. From 9 to 12 July, the group of 15 agricultural experts and technicians came to the province to conduct investigation. [HK190741 Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 20 Jul 81]

SUMMER GRAIN PROCUREMENT--On 16 August, the Guangdong provincial people's government issued an urgent circular calling on all localities to strengthen leadership over summer grain procurement. The circular said: To do a good job in summer grain procurement, we must launch meticulous ideological work and mobilize the peasants to sell summer grain to the state. The circular emphasized that all localities should implement summer grain procurement and distribution policies. In disaster areas, appropriate amounts should be deducted from the quota of summer grain to be delivered to the state. [HK260255 Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 17 Aug 81]

HAINAN RELIEF WORK--The Guangdong Provincial Agricultural Reclamation General Bureau and the Tongza Agricultural Reclamation Bureau appropriated relief funds of 2.33 million yuan for state farms hit by typhoon. This year's No 5 typhoon hit some 20 subordinate state farms of the Tongza Agricultural Reclamation Bureau and caused serious losses. These relief funds will be chiefly used to help the staff members and workers of the affected farms repair their houses and overcome particular difficulties in their livelihood. [HK190807 Haikou Hainan Island Service in Mandarin 0330 GMT 24 Jul 81]

NEGOTIATED GRAIN PRICES--Guangdong has promoted buying and selling grain and oil at negotiated prices. Grain departments in all localities actively buy and sell grain and oil at negotiated prices after fulfilling the procurement task for grain and oil. Such a practice meets the demand of the market. According to statistics, since the beginning of 1981, more than 1.343 billion jin of grain and 39 million jin of cooking oil was bought at negotiated prices; and 1.028 million jin of grain and 49 million jin of cooking oil was sold at negotiated prices. Such a practice has regulated the market prices and increased the supply of grain and oil in the rural areas. While carrying out the buying and selling of grain and oil at negotiated prices, grain departments in all localities pay attention to rectifying the orientation and persisting in selling more at a lower price so as to promote production and improve the living standard of the people. Hence, the market has been enlivened. [Guangzhou Guangdong Provincial Service in Mandarin 2330 GMT 30 Jun 81]

CSO: 4007/558

WATER CONSERVANCY FACILITIES IMPLEMENT MANAGEMENT RESPONSIBILITY SYSTEM

Beijing RENMIN RIBAO in Chinese 7 Jul 81 p 2

[Article: "Adapt to the New Situation After Establishing the Production Responsibility System; Guizhou Farm Village Water Conservancy Project Implements the Management Responsibility System"]

[Text] NCNA, Guizhou--Over 70 percent of water conservancy facilities in Guizhou Province have implemented the management responsibility system, reduced conflicts in water conservancy, conserved the use of water, and fully developed the function of water conservancy projects.

After Guizhou farm villages implemented the production responsibility systems of contracting production to the families or assigning contract cadres to the families on a widespread scale, units engaged in productive activities changed from production teams to the family, and the past practice of "one hoe" water releasing system has now become a "many hoes" water releasing system. Therefore, fighting for water occurred at some localities. Facing this new situation, the Guizhou CCP provincial committee and the provincial people's government grasped strengthening of management of water conservancy as an important factor in stabilizing and perfecting the agricultural production responsibility system. The provincial government issued notice to protect water conservancy projects. Departments of water conservancy and farm machinery dispatched over 2,600 cadres to go deeply into the farm villages to help explore water management methods suitable to the new situation. The Daba and Sandaogou Production Teams of Gaole Commune in Qingzheng County share one drawing and irrigation station. They signed a contract and made the system sound and clearly defined the duties and the salary of the water controler and water fees. Water conservancy annual repair work was implemented to the beneficiary families, an agreement over water use and articles covering punishment was established. The provincial people's government confirmed this method in time and enabled the water conservancy management responsibility system to be rapidly popularized.

9296
CSO: 4007/511

BRIEFS

CONFERENCE ON FORESTRY--According to a GUIZHOU RIBAO report, the Guizhou provincial CCP Committee and provincial government convened a conference on forestry, conveying the spirit of the national conference on forestry, summing up past experiences and discussing the several regulations of the provincial CCP Committee and government on protecting forests and developing forestry. The conference held: Forestry is still a weak point in the country's development of the national economy. We must seriously implement the central authorities' instructions on protecting forests and developing forestry. During the conference, the Standing Committee members of the provincial CCP Committee listened to the reports of the prefectural CCP Committee secretaries. Comrades Chi Biqing and Wang Chaowen delivered speeches and Comrade (Hou Yusan), deputy director of the forestry department also gave suggestions. [HK210847 Guiyang Guizhou Provincial Service in Mandarin 2315 GMT 12 Aug 81]

CSO: 4007/560

FARM VILLAGES FIGHT DROUGHT, 190,000 MU OF LATE FALL CROPS NOT SOWN

Beijing BEIJING RIBAO in Chinese 25 Jun 81 p 1

[Article: "Broad Masses of Cadres and Commune Members Stubbornly Fight Serious Drought; 1,240,000 Mu of Late Fall Crops Sown in Suburbs; 190,000 Mu Could Not Be Sown, Preparation for Supplementary Planting Must Be Done Well"]

[Text] After stubbornly resisting drought, the suburban farm villages have sown a total of 1.24 million mu of late fall crops. Starting from the autumn of the year before last, soaking rain did not fall for 23 months in suburban farm villages, and with the addition of more winds and high temperatures this spring, loss of moisture in the soil is very serious. Some rivers have already run dry. The underground water level has dropped and the water in mechanized wells has decreased sharply. To win this year's agricultural bumper harvests, the broad masses of cadres and commune members struggled stubbornly against drought. Each locality blew and washed 2,300 mechanized wells (cleaning the well of dirt and unwanted objects). Deep well pumps were installed in place of small pumps on 1,300 wells, and 2,460 mechanized wells were renovated or newly sunk. While they opened up resources and insisted on conserving the flow at the same time, 10 percent of the usual amount of water used to irrigate a unit area of summer food grain crops was conserved. To reduce leakage in ditches and channels, the entire suburban region used cement plates to line 210 kilometers of water channels. Daxing County also planted 87,000 mu of paddy rice in dry conditions this year and conserved the amount of water for paddy fields. The concerned departments of the city gave full support to the farm villages to resist drought. After struggling through a spring season, 1.24 million mu of late autumn crops was sown. Because the drought was severe, there is still 190,000 mu of late fall crops that cannot be sown. Of the areas already sown, there is 600,000 mu of fields where seedlings have not germinated or where there has been incomplete germination.

At present, eacy county (region) in the suburban area is still actively carrying out sowing activities and activities to protect seedlings centered around drought resistance.

9296
CSO: 4007/511

BRIEFS

SUMMER GRAIN PROCUREMENT--Hebei has overfulfilled its summer grain procurement quota. By 3 August, a total of 1.2085 billion jin of grain had been procured, overfulfilling the quota by 10.2 percent. [HK180743 Shijiashuang Hebei Provincial Service in Mandarin 0400 GMT 5 Aug 81]

HEBEI SUMMER GRAIN PRODUCTION--Hebei reaped a relatively good summer grain harvest after waging protracted and stubborn struggle against drought. According to statistics, total summer grain output reached 8.435 billion jin, an increase of 8.7 percent over last year. The increase in Shijiazhuang Prefecture was 29 percent. The province had only 290 mm of rain from July last year to mid-May this year, 28 percent less than normal. On average each wheat plant carried 30 grains, 4 or 5 more than last year. [HK180743 Shijiazhuang Hebei Provincial Service in Mandarin 0400 GMT 9 Aug 81]

BEIJING SUMMER GRAIN--The Beijing City outskirts reaped a bumper summer grain harvest despite drought. The total harvest was 1.209 billion jin, an increase of 33.4 percent over last year. [HK180743 Beijing City Service in Mandarin 2300 GMT 30 Jul 81]

SUMMER GRAIN PROCUREMENT--By 1 July, Beijing Municipality already had 160 million jin of summer grain put in storage, overfulfilling the plan for summer grain procurement and storage by 110 percent and up more than 100 percent compared with the same period of last year. [HK120514 Beijing City Service in Mandarin 2300 GMT 9 Jul 81]

CSO: 4007/558

BRIEFS

BEET PRODUCTION--Nenjiang Prefecture, an oil-bearing seed and sugar production base of Heilongjiang, sold 330 million jin of oil-bearing seeds and 800 million jin of beets to the state in 1980. This year the prefecture has planted 2.5 million mu of sunflowers and 800,000 mu of beets. It expects to sell 500-600 million jin of sunflower seeds and 1.2 billion jin of beets to the state this year. [SK181439 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 17 Aug 81]

TIMBER PRODUCTION--The Heilongjiang provincial conference on comprehensive timber utilization concluded on 31 July at the (Tieli) Forestry Bureau. There are 993 comprehensive timber utilization mills and workshops in the province producing 168 products with an annual output value of 460 million yuan. The conference urged that in the next 3 years the development of comprehensive timber utilization should be aimed at the production of boards, finished products and semifinished products. By 1983 the annual provincial output value from comprehensive timber utilization should increase to 743.6 million yuan. Attending the conference were Chen Lei, governor of the province; (Wang Guangwei), secretary general of the provincial people's government; and (Wang Wenxi), director of the provincial forestry bureau. [SK040727 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 2 Aug 81]

FLAX OUTPUT--Heilongjiang Province planted some 1.2 million mu of flax this year. It is estimated that the per-mu yield of flax will average about 350 jin, a record. [SK170546 Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 16 Aug 81]

SUGAR INDUSTRY--Harbin, 28 Jul (XINHUA)--Heilongjiang Province is building and renovating sugar plants to cope with the expected growth of sugar beet production this year, according to the Sugar Industrial Corporation. This year, the central government has allocated nearly 100 million yuan for the province's sugar industry. Of the sum, 42 million yuan will be used to continue the construction of four plants, each of which will have an annual capacity of 10,000 tons of sugar. Two of the plants are expected to be completed before October, just ahead of the sugar refining season. Heilongjiang, which produces more than half of the country's beet sugar, will have a sugar refining capacity of 382,000 tons in the coming refining season. This year, 256,000 hectares of beet were grown in Heilongjiang, 29,000 hectares more than in 1980. In 1979, the beet growing areas totaled only 147,000 hectares, the corporation said. [Beijing XINHUA in English 0229 GMT 28 Jul 81]

WHEAT PUT ON MARKET TO STABILIZE FOOD GRAIN PRICES

Beijing RENMIN RIBAO in Chinese 20 Jun 81 p 2

/Article: "Food Grains Department Guides the Food Grains and Oil Crops Market; Henan Province Puts Wheat on the Market to Stabilize Food Grain Prices"/

/Text/ Correspondents Li Haifu /2621 3189 3940/ and Shi Jibin /0670 4764 2430/ report: The Henan Provincial Food Grains Department has exercised its guidance of the food grains and oil crops market, starting from 1 May, it has placed a batch of wheat into over 500 agricultural trading markets in 47 counties where food grain prices are higher. As of 10 May, the average price of wheat has dropped from 3 jiao 6 fen 1 li per jin to 3 jiao 4 fen, a drop of 5.8 percent. At present, the prices of food grains in the entire province's agricultural markets have all been dropping.

Last year, Henan Province had a better harvest of food grains. But, because the farmers had money, they wanted to buy more fine grains to improve their life and the food service industry in towns greatly developed and the need for fine grains increased. In addition, some units and individuals rushed into the market to make purchases and because of such reasons, last winter and this spring, food grain prices in the market continued to rise, and the price of wheat rose the most.

To suppress the prices of food grains, to calm the people's anxiety, and to arrange the life of the masses well, the Henan Provincial Food Grain Department paid serious attention to the situation of continued rise in prices of food grains in the agricultural markets, and as early as last November, it issued a notice to all localities to stop procurement at negotiated prices when the market price per jin of wheat rose over 3 jiao, when the market price per gin of corn rose over 2 jiao, when the market price per jin of dried sweet potato rose over 1 jiao 5 fen and the products were left in the market. On 1 May, all of the more than 500 agricultural markets in 47 counties where the prices of food grains were higher released the sale of wheat at below market prices simultaneously, and this quickly reinstated the normal price levels of food grains. Before the Zhoukou area released the wheat, the price of wheat in the market was 3 jiao 6 fen 7 li per jin, after releasing wheat for sale, the price quickly dropped to 3 jiao 2 fen 7 li. Because organizing negotiated prices and release for sale was carried out in time, the emotions of the masses were stabilized and the reactions were good. Some commune members said: "The food grain authorities released wheat to sell at low prices at the time of difficulties and made us feel calm." The release of food grains throughout the province was forceful, the scope was broad, the time was long, the opportunists were not given a chance, therefore the prices of food grains dropped quickly. This has served importantly in developing a stable and unified situation, promoted production, and adjusted the life of the masses.

9296
CSO: 4007/494

UNDERGROUND GRANARIES USED, RESULTS GOOD

Beijing GUANGMING RIBAO in Chinese 27 Jun 81 p 1

[Article: "Henan Uses Underground Granaries and Results Are Good; This Has Been Affirmed by the State Scientific and Technological Commission and the State Planning Commission; They Believe This Should Be Popularized Throughout the Nation by Suiting Measures to Local Circumstances"]

[Text] More than 60 counties and cities in Henan Province are utilizing underground granaries and good results have been obtained. Recently, the State Scientific and Technological Commission, the State Planning Commission, the Ministry of Food, and the Ministry of Finance held a summarization and evaluation meeting in Zhengzhou and experts attending the meeting went to Luoyang and Kaifeng to inspect underground granaries built under different geological conditions. They fully affirmed this type of underground granary facilities and believed the experience of Henan can be popularized throughout the nation by suiting measures to local circumstances.

Our nation's underground granaries have a long history. The Henan provincial food grains department organized engineers and technical personnel to dig up the Hanjiachang granary in Luoyang to study and learn from the advantages of the structure of ancient underground grain storage cellars. From 1965 on, they began trial construction of modern underground granaries, and built seven types of granaries and underground granaries of multiple structural types. They determined the bell shaped granary was the best in comprehensive gain and exerted major efforts to popularize this granary type. According to measurements, wheat stored in underground granaries for 10 years has a sowing and germination rate of 97.8 percent, the coarse solid fatty base is 2.33 percent, the coarse solid protein base is 2.64 percent, acidity is 3.68, when ground into flour, it is not too different from fresh wheat. Building underground granaries requires less investment, the cost of building each million jin of storage capacity is only 60 to 80 percent the cost of building a warehouse type granary. Cost of caring for each 10,000 jin of food grains per year is generally one-fourth that of the warehouse type granary. Repair costs can also be conserved. In addition, such granaries are good in guarding against birds, rats, fire, earthquakes, and nuclear pollution.

9296
CSO: 4007/511

BRIEFS

SUMMER GRAIN PROCUREMENT--By 6 July, Henan Province had garnered 3.20857 billion jin, overfulfilling this year's quota for procuring summer grain 54 days ahead of schedule compared with last year. The superior and medium grade summer grain garnered accounted for 90 percent of the total quantity of summer grain garnered. The province's total output of summer grain this year almost approached the level for 1979, a big bumper harvest year. It was the second best summer harvest since liberation. Nanyang Prefecture overfulfilled its quota for procuring summer grain by 45 million jin. [HK030902 Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 8 Jul 81]

CSO: 4007/558

BRIEFS

HUBEI RAIN--Over the past 3 days, it has rained in most parts of Hubei Province. The rainfall of the northern part of Xiaogan Prefecture, the western part of Yichang Prefecture, the southern part of Jingzhou Prefecture and Yunyang, Enshi and Xianning prefectures is more than 40 mm and the biggest rainfall is 80 mm. The drought situation of these places has been mitigated. However, the rainfall of Xiangyang Prefecture, the eastern part of Yichang Prefecture and the northern part of Jiangzhou and Huanggang prefectures is only 15 to 20 mm. As the rainfall of these places is little, it is essential to step up the struggle against drought. [HK180543 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 11 Aug 81]

RAPESEED HARVEST--Wuhan, 31 Jul (XINHUA)--Hubei has reaped a good harvest of rapeseed. The total rapeseed harvest in the province in 1981 reached 420 million jin, exceeding that of 1979 by 40 percent. The state has procured 163 million jin of rapeseed from the province, an increase of 43 percent over that in 1954. [OW111141 Beijing XINHUA Domestic Service in Chinese 1446 GMT 31 Jul 81]

CSO: 4007/558

BRIEFS

DROUGHT WORSENING--Since late June, Xiangxi Tujia-miao Autonomous Prefecture, Huaihua County and many localities in Shaoyang Prefecture, in Hunan Province, have been suffering from drought and the situation is worsening. Estimates made on 25 July showed that more than 13 million mu of paddy rice was affected. In some localities, rivers and ponds have dried up and there is a shortage of drinking water for both men and animals. [OW291653 Changsha Hunan Provincial Service in Mandarin 2300 GMT 28 Jul 81]

CSO: 4007/558

JIANGNING'S 'COMPANION PLANTING OF RICE IN SEEDBEDS' DEMONSTRATED

Nanjing XINHUA RIBAO in Chinese 19 Jun 81 p 1

[Article: "Jiangning County's 'Companion Planting of Rice in Seedbeds' Experience Is Popularized in Nine Provinces and Regions"]

[Text] Last year, Jiangning County's "companion planting of rice in seedbeds" experience (i.e., companion planting of hybrid paddy rice in double season late rice seedbeds) was experimentally demonstrated in our province, Zhejiang, Jiangxi, Hubei, and Hunan provinces. This year, experiments and demonstrations were conducted in the four provinces and regions of Anhui, Fujian, Guangxi and Guangdong.

The successful experience of the experiment of "companion planting of rice in seedbeds" carried out jointly by the agricultural technical cadres of Jiangning County and the masses is a new creation in the cultivation of rice crops. For 3 years, our province has popularized this method over an accumulated area of over 800,000 mu, producing an increased yield of over 200 million jin of rice grains. Last year, it participated in experiments and demonstrations in five provinces, and under conditions of low temperatures, less sunshine and early occurrence of cold dew winds in July, August and September. It still produced bumper harvests; generally each mu produced an increased yield of 100 to 200 jin. This year, our province's localities have planned to plant an area of over 600,000 mu of "companion planting of rice in seedbeds," and planned to exert further efforts to summarize experience in physiology and ecology surrounding dual benefits to rice and seedlings and to study the effects upon the quality of the seedlings and rational adjustment measures so that the results of popularization of this new technique can be more perfect.

9296
CSO: 4007/511

BRIEFS

FIELD MANAGEMENT--Field management for autumn grain and cotton crops is being strengthened in various parts of Jiangsu. In Xuzhou Prefecture, additional fertilizer has been applied to 3.14 million mu, of a total of 3.18 million mu, of paddy rice. In Huaiyin Prefecture, insect pests discovered on more than 1 million mu of paddy rice have been basically brought under control. In Yancheng Prefecture, additional fertilizer has been applied to 3.44 million mu, of a total of 3.7 million mu, of cotton. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 3 Aug 81]

FARMLAND IRRIGATION--At present 51.13 million mu of farmland in Jiangsu Province is under effective irrigation, more than 18 times that in 1952. The effectively irrigated area now accounts for more than 70 percent of the province's total area of cultivated land. [OW111109 Nanjing Jiangsu Provincial Service in Mandarin 2300 GMT 6 Aug 81]

EARLY RICE--Jiangsu Province has by and large completed harvesting of its 5.59 million mu of early rice. This year's total early-rice acreage is smaller than last year but per-unit yield has generally increased. Increased output has been reported by all counties in Yangzhou Prefecture which has a combined total of 1.64 million mu of early rice. Of the 2 million mu of this crop in Suzhou Prefecture, per-unit yield exceeded 800 and even 1,000 jin per mu in some localities. [OW111109 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 8 Aug 81]

LATE RICE--Jiangsu Province has completed transplantation of its late rice. This year the province has planted over 6.27 million mu of late rice. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 15 Aug 81]

CSO: 4007/558

BRIEFS

EARLY RICE--Nanchang, 9 Aug (XINHUA)--Although Jiangxi Province's early-rice acreage in 1981 is 530,000 mu less than in 1980, its total early-rice output in 1981 is 4.2 percent, or 540 million jin, more than in 1980. [OW111109 Beijing XINHUA Domestic Service in Chinese 0230 GMT 9 Aug 81]

RICE HARVEST--Jiangxi Province has reaped a bumper harvest of early rice this year with total output topping last year by 540 million jin, or an increase of 4.2 percent. Thanks to the implementation of production responsibility systems, the bumper harvest was achieved despite a 160,000 mu decrease in acreage. According to statistics, (Ji'an), Ganzhou and Shangrao prefectures each increased grain output by more than 100 million jin. Because of the early implementation of production responsibility systems, Jishui and Taihe counties each increased output of early rice by over 30 million jin. [OW150302 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 10 Aug 81]

PEANUT PRODUCTION--The peasants in Longnan County, Jiangxi Province, reaped a bumper harvest of peanuts from 1,800 mu of land sown to peanuts of the (Yuxuan) No 58 new strain. The total output reached 630,000 jin and the per-mu yield reached 350 jin, 66 percent higher than the unit yield of other local strains. [OW161305 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 13 Aug 81]

RICE HARVEST-The peasants in Jishui County, Jiangxi Province, reaped a bumper harvest of early and mid-season rice this year. The total output is 31.2 million jin more than that of the same period last year, increasing by 11.75 percent. They cultivated more than 500,000 mu of early and mid-season rice this year. [OW161305 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 13 Aug 81]

CITRUS FRUIT PRODUCTION--The comprehensive scientific inspection team of the southern mountain regions dispatched by the Chinese Academy of Sciences concluded its inspection believing southern Jiangxi has unique conditions for developing the production of citrus fruits. If the over 500,000 mu of wasteland can be utilized and citrus fruits can be planted in the 280,000 mu which have better conditions, then after 5 years, the yield can reach over 5 million dan, equivalent to about half the total yield of citrus fruits in our nation. The southern region of

Jiangxi has a long history of cultivating citrus fruits. After Liberation, the production of citrus fruits developed by a larger extent and at present the yield is over 100,000 dan. The scientific inspection team conducted actual surveys here for nearly half a year and saw that there are many favorable conditions here which can be utilized to develop citrus production on a large scale. [Text] [Beijing GUANGMING RIBAO in Chinese 27 Jun 81 p 1] 9296

CSO: 4007/511

COMMERCIAL FOOD GRAIN BASES DEVELOPING

Beijing RENMIN RIBAO in Chinese 6 Jul 81 p 1

[Article: "Establishing the Production Responsibility System; Taking a Series of Important Reform Measures; Outstanding Achievements Are Realized in Building the Commercial Food Grain Base in the Central Plains of Jilin; Each Laborer Produced an Average of 7,597 Jin of Food Grains in the Counties of the Nine Commercial Food Grain Bases, More than the Provincial Average by 2,231 Jin, Each Person Provided 557 Jin of Commercial Food Grains, More than the Provincial Average by 237 Jin"]

[Text] Changchun, July 5--Our nation's important commercial food grain base--the central plains of Jilin Province--realized outstanding achievements. In 1980, each person of the nine commercial food grain base counties of Yushu, Huide, Nongan, Fuyu, Dehui, Lishu, Jiutai, Yitong, and Shuangyang averaged 1,320 jin of food grains, more than the average of the entire province by 542 jin. Each agricultural laborer produced an average of 7,597 jin of food grains, more than the average of the whole province by 2,231 jin. Each member of the farming population provided an average of 557 jin of commercial food grains, more than the average of the whole province by 237 jin. The percentage of commercial food grains reached 39.66 percent, higher than that of the province by 5.78 percent. The rate of development of production, the contribution to the state, the increase in the labor production rate, the increase in the income of the collective and commune members all led the province.

The counties of Yushu, Huaide, and Nongan were determined to be established as commercial food grain bases in 1978. The Jilin provincial committee and the party committee of each county conscientiously implemented the party's farm village economic policy, and up to the beginning of this year, the production teams which have established the production responsibility system have already reached over 95 percent of the total number of production teams.

At the beginning of last year, the Jilin provincial committee proposed a series of important reform measures for the construction of commercial food grain bases, for example, readjusting the internal economic structure of agriculture, developing diversification in a big way, assigning cadres to procure food grains and oil and free management of surplus yields, implementing contract procurement of other agricultural, sideline, handicraft and specialty products, allowing production and marketing to come into direct contact, implementing assignment of cadres to manage finances, letting each county use the increased income to develop production,

actively developing external trade, expanding income of foreign exchange, and appropriately distributing profits to the counties. The thorough implementation of these policy measures assured the autonomy of the production teams, mobilized the enthusiasm of the masses, benefited the state, increased the income of the collective, and brought actual benefits to the commune members.

To further enliven farm village economy, the Jilin provincial committee also established some joint agricultural, industrial and commercial enterprises in the three counties of Yushu, Huaide, Nongan and some communes in other counties to explore the road of comprehensive business operations in agriculture, industry and commerce.

9296
CSO: 4007/511

BRIEFS

CROP ACREAGE--According to a responsible person of the provincial agriculture department, in 1981 Jilin Province has reduced its corn acreage to 23.13 million mu, a decrease of 2.12 million mu compared with 1980. It expanded the soybean acreage to 8.95 million mu, an increase of 610,000 mu; oil-bearing crops, to 3.58 million mu, an increase of 790,000 mu; and millet, to 6.45 million mu, an increase of 210,000 mu. Paddy rice farming acreage increased slightly. [Changchun Jilin Provincial Service in Mandarin 1100 GMT 31 Jul 81]

CSO: 4007/558

BRIEFS

LIVESTOCK PRODUCTS--Liaoning's provincial livestock product procurement is steadily increasing. According to statistics, in the first 6 months of 1981, the procurement value was over 34 million yuan. This accounts for 88 percent of the provincial annual procurement plan and represents a 21.3 percent increase over the corresponding 1980 period. [SK290706 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 28 Jul 81]

AGRICULTURAL LOANS--Agricultural banks and credit cooperatives in Liaoning Province issued 1.15 billion yuan of agricultural loans in the first half of this year, a 20 percent increase over the corresponding 1980 period. These loans have been used to help communes and brigades develop grain production and diversified economy and in the production of consumer goods. Some 860 million yuan in loans reaching maturity were withdrawn, 100 million yuan more than in the corresponding 1980 period. [SK010112 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 30 Jul 81]

VEGETABLE SOWING--Suburban areas in the 10 municipalities of Liaoning Province have completed sowing autumn vegetables. According to statistics compiled on 5 August, they had planted 368,000 mu of autumn vegetables, fulfilling their sowing plan by 82 percent. The sowed acreage of Chinese cabbage was 231,000 mu; radishes, 89,000 mu. [Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 12 Aug 81]

MANURE COLLECTION--According to statistics compiled 8 August by the Liaoning Provincial Agricultural Bureau, the province has collected 121.1 billion jin of farmyard manure, a 7.5 billion jin or 6 percent decrease from the corresponding 1980 period. The Agricultural Bureau stated: The province put too much emphasis on chemical fertilizer and not enough on farmyard manure. The province stresses current production and ignores preparations for next year's production. Some brigades are assigned quotas for production but not manure collection. Some localities pay to little for manure. Most municipalities, prefectures and counties do not have persons managing this work. [SK150845 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 14 Aug 81]

CSO: 4007/558

BRIEFS

LIVESTOCK PRODUCTION--Xingan League, Nei Monggol Autonomous Region, has reaped a bumper harvest in animal husbandry. According to statistics compiled at the end of June, the league owned 2.04 million head of large and small animals, surpassing the figure of the corresponding 1980 period by 400,000 head. The survival rate of newborn animals was 89.2 percent, bettering previous records. The animal death rate declined from 7.9 percent in 1980 to 6.1 percent in 1981. The number of individually-owned animals was 830,000 head, raised by over 130,000 households. [SK030312 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 2 Aug 81]

GRASSLAND INCREASE--The autonomous regional people's government attaches great importance to the program to develop grassland in rural areas. Since the beginning of 1981, the government has appropriated 13 million yuan for the program. The region has planted 4 million mu of fodder grass, thus bringing about an ecological balance across the region. [SK111409 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 10 Aug 81]

BUCKWHEAT PRODUCTION--Buckwheat production suitable to the autonomous regions natural conditions has been restored and sharply developed throughout the region. The cultivated acreage of buckwheat this year was over 2.5 million mu. Areas suitable to this production still seek ways and means to increase the output of buckwheat which might bring about great profits for the state from exports. [SK111409 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 10 Aug 81]

CSO: 4007/558

BRIEFS

FLOOD WARNING--The provincial hydrological station released a report on the Huangshui River at 1400 on 19 August: 98 cubic meters per second at (Shiaizhuang) station, Huangyuan County; 118 cubic meters per second at (Xiaotou) station, Datong County; 258 cubic meters per second at (Xining) station, Xining Municipality; and 450 cubic meters per second at (Daxia) station, Ledu County. Flood possibility is increasing. Departments concerned should pay attention. [SK201202 Xining Qinghai Provincial Service in Mandarin 1100 GMT 19 Aug 81]

CSO: 4007/560

BRIEFS

COTTON STRAIN AWARDED PRIZE--Beijing, 8 Aug (XINHUA)--In appreciation of the work of Shandong Province's Cotton Research Institute, which developed a strain of cotton that last year greatly raised output and incomes, peasants in that province donated 36,000 yuan to the institute, according to today's RENMIN RIBAO. The cotton output of the province increased from 166,500 tons in 1979 to 535,000 tons last year. As a result, the new strain was awarded a first-class prize this year by the State Scientific and Technological Commission. [OW111109 Beijing XINHUA in English 1217 GMT 8 Aug 81]

CSO: 4020/240

BRIEFS

GRAIN PROCUREMENT--Communes and production brigades and teams in counties on the outskirts of Shanghai are eagerly selling grain to the state. According to statistics of Songjiang, Jinshan, Qingpu, Nanhui and Fengxian counties, as of 6 August, 103.23 million jin of early rice had been procured and put in storage. [OW150302 Shanghai City Service in Mandarin 1130 GMT 11 Aug 81]

CSO: 4007/558

BRIEFS

TORRENTIAL RAINSTORMS--From 13 August to 1400 hours on 17 August, 63 counties, municiplaities and districts in Sichuan were hit by heavy, torrential and violent rainstorms. In the course of these storms some county seats and land were inundated. Local party, government and army responsible comrades have actively led and organized the masses to fight the floods and carry out rescue and relief, to ensure the safety of people's lives and state property. The provincial CCP Committee and government have dispatched work groups to heavily-hit prefectures and counties to find out the extent of the disaster and comfort the stricken masses. The Chengdu central meteorological station of the provincial meteorological bureau forecast at 2330 hours on 17 August that there would be heavy or torrential rain in Yaan, [word indistinct], Yibin, Neijiang, Zigong, Nanchong, and Yongchuan prefectures and municipalities and the southeast part of Mianyang Prefecture on 18 and 19 August. There will be moderate rain in Wenjiang Prefecture and Chengdu Municipality and the northwest part of Mianyang Prefecture, with torrential rain in places. The rest of the province will have cloudy weather, become fine. It is hoped that prefectures and municipalities where there are torrential rainstorms will pay attention to antiflood precautions and drainage. [HK180158 Chengdu Sichuan Provincial Service in Mandarin 2300 GMT 17 Aug 81]

CSO: 4007/560

BRIEFS

WATER CONSERVANCY CONFERENCE--The Xizang region recently held a conference on water conservancy and electricity work. The conference pointed out that by the end of 1980, the region had some 2.29 million mu of irrigated land and had built small power stations and hydroelectric power stations with a total installed capacity of some 84,000 kilowatts. The residents of the main urban areas now have an electricity supply. [Lhasa Xizang Regional Service in Mandarin 1130 GMT 25 Jul 81 HK]

CSO: 4007/560

NEW FORM OF RESPONSIBILITY SYSTEM REPORTED

Commentary on Introduction of New System

Kunming YUNNAN RIBAO in Chinese 6 Jul 81 p 1

[Article: "Give Attention to Solving Problems in the System Where by Individual Households Guarantee Delivery of Quotas and Contributions To Reserve Funds"]

[Text] In some places in Yunnan Province where levels of productivity and management are fairly low and where poverty and backwardness has existed for a long time, since the institution of a system of responsibility whereby individual households guarantee fulfillment of production, state procurement, and reserve fund quotas, remarkable results have been obtained in promoting development of production, in solving peasant food and shelter problems, and in changing the situation of poverty. The masses call the system a "miraculous cure."

Institution of a system whereby individual households guarantee fulfillment of production, state procurement, and reserve fund quotas constitutes a new form of the system of responsibility; consequently, new problems are inevitable in its development. For example, in contracting with individual households for guaranteed production, some production brigades have not acted very sensibly. Some brigades have given attention only to contracting for grain, halting the original collective diversification. Some brigades have made improper use of collective financial management. In some brigades the portion to be suspended in reserve has not been clarified, and nothing has been done by way of implementation. In some brigades nothing has been done to put into effect the five forms of care guaranteed four categories of people (guaranteed food, clothing, medical care, housing and burial expenses for the families of martyrs, servicemen, and childless or inform old persons), nor have cadre subsidies or planned births been put into effect. In some brigades creditor rights and responsibilities have not been sorted out, etc. The main reasons for these problems are, first, the suddeness with which contracting with individual households for guaranteed production, state procurement, and reserve funds was done, the lack of practical experience, and the inability of many cadres to cope with the task. Second, the leadership in some areas had been deeply affected by leftism, and mistakenly supposed that the system whereby individual households guaranteed fulfillment of production, state procurement, and reserve fund quotas was not a system of responsibility. In carrying out the contracting with individual households, they felt it was "politically dishonorable," and at first they "blocked it," every echelon setting up defenses against it and not permitting it to be put into effect. When they could not succeed in blocking it, they washed their hands of any involvement with it, abandoned leadership and let things

take their course. If one overemphasizes existing problems, becomes alarmed unnecessarily at something perfectly normal, makes willful criticisms, throws cold water on the task, or seeks to "correct an error," that is wrong. However, if one's conception is not very clear and he sees only the good aspects, cannot see or avoids seeing problems, that is wrong too. Unless existing problems are promptly solved, egalitarian ideology will raise its head and the collective means of production will be damaged; publicly owned property will be lost; diversification will be unable to develop; witholding for reserves will be unable to be implemented; commune members will slacken their efforts; cadres will become apathetic, finally impairing the development of production, the improvement of life, and population control, even hurting stability and unity.

In order to do a good job of contracting with individual households for guaranteed fulfillment of production, state procurement, and reserve fund quotas as a system of responsibility for production, it is now necessary, first of all, to further solve problems in understanding this form of a system of responsibility. The system of contracting with individual households for guaranteed fulfillment of production, state procurement, and reserve fund quotas is a form of the system of responsibility whereby the independent operation and initiative of commune members is given full play under the unified leadership of production teams. Institution of this system of responsibility will not only solve current peasant problems in food and shelter, but as production develops, gradually there will emerge a linking to specialized division of labor, which is entirely voluntary on the part of commune members, for the promotion of all around development of grain and diversification. In this system of responsibility, benefits are direct; responsibilities are specific; and methods are simple. The peasants welcome it. Therefore, one should have a positive attitude, and strengthen leadership of this system of responsibility, and positively not let things slide. The proper attitude to be adopted toward new circumstances and new problems that arise in the system of responsibility whereby individual households guarantee fulfillment of production, state procurement, and reserve fund quotas is both to give attention to the direction of the main current while not neglecting attention to the direction of lesser currents, and enthusiastically help commune members solve existing problems. Not long ago, this newspaper reported how the Xinping County CCP Committee personally "went into the water," made a thoroughgoing investigation, and set forth methods for solving various policy problems involved in the contracting with households for guaranteed fulfillment of production, state procurement, and reserve fund quotas, and how it organized forces for production team by production team implementation, which steadily improved this system of responsibility. The Luchun County CCP Committee on which this newspaper reports today has also done the same thing, and has likewise won good results. The experiences of numerous areas show that so long as the leadership mentality is unequivocal, attitudes correct, and methods proper, problems existing in the contacting with individual households for guaranteed fulfillment of production, state procurement, and reserve fund quotas are not difficult to solve. Leadership comrades who had fairly numerous mental shackles during the previous period in contracting with individual households for guaranteed fulfillment of production, state procurement, and reserve fund quotas must all the more personally "go down into the water," and use an attitude of hearty enthusiasm to solve problems. This is the only way in which they can help communes and brigades who are instituting contracts with individual households for guaranteed fulfillment of production, state procurement, and reserve fund quotas, do a good job with this system of responsibility.

Since contracting with individual households for guaranteed fulfillment of production, state procurement, and reserve fund quotas is a form of a system of responsibility whereby individual commune members bring into full play their independent action and initiative under the unified leadership of the collective economy, is in accordance with and is able to maintain the principle of collective economic leadership, and is able to make the most of individual commune member individual action and initiative, this system of responsibility can only steadily be consolidated and improved. Generally speaking, the problems requiring solution in contracting with individual households for guaranteed quotas principally include contracting for land and livestock care and use, protection and care of mountain forests, and withholdings for reserve funds, care of the dependents of martyred soldiers, the people guaranteed five forms of care and other hardship households, clarification of creditor's rights, creditor's responsibilities, and overspending, implemention of policies relating to planned births, signing of contract agreements, rights and duties of cadres and commune members etc. For some of these problems, clearcut policies have already been formulated, and among some of the masses some beneficial experiences' have been gained, or else there have been advanced experiences in other places. So long as each echelon of leadership proceeds from realities and in accordance with the party's policies, principles, and formulations, consults the experiences of other places, and organizes grassroots level cadres and commune members to use their heads and think of ways of doing things, these problems can be solved.

Luchun County's Experiences

Kunming YUNNAN RIBAO in Chinese 6 Jul 81 p 1

[Article by Fan Zhengbao [4636 2973 0202]: "Luchun County Organizes Cadres, Dividing Work and Assigning a Part to Each To Give Help Production Team by Production Team For Timely Handling of Problems That Cropped Up in 'Double Guarantees' On a Household Basis"]

[Text] The Luchun County CCP Committee has conscientiously solved problems that have cropped up in assigning land and draft oxen care and use in fixing production quotas on a household basis, and in contracting with individual households for guaranteed fulfillment of production, state procurement, and reserve fund quotas, thereby steadily bettering the system of responsibility of "double guarantees" on a household basis for the promotion of production.

In Luchun County, 913 production teams have instituted a system of responsibility for production whereby either individual households guaranteed production or individual households guaranteed production, state procurement, and reserve fund quotas. Because of lack of experience and a desire to succeed, attention was given only to getting underway, accurate guidance being lacking. So even though systems of responsibility have been established, work has not been solidly done; the foundation is not solid; and in some production teams incidents have cropped up in which individual commune members have fought over fields, have snatched away oxen and horses, and have privately sold collectively owned draft oxen. The County CCP Committee believes that the emergence of these problems constitutes an erroneous "reading of history" as in the assignment of land during the land reform period when people did not want to return land even when they had so many fields they could not farm them all while those with few fields did not have enough to farm. In the assignment of draft oxen in particular, in order to recompense those households with a large number of oxen at the time of joining the commune, after first "taking care" of them with one-third or

one-fourth of the oxen and assigning the remainder in accordance with regulations, some individual households ended up without oxen to plow their fields. The County CCP Committee then convened a meeting of cadres from the three levels [production team, production brigade, and commune] to study over and over again the Central Committee documents pertaining to strengthening and improving a system of responsibility for agricultural production, to improve mentality and obtain a unified perception, as well as to formulate specific means for a solution. It was decided that all communes and brigades in which contracting for fixed production quotas on a household basis had been done, or in which contracting with individual households for guaranteed fulfillment of production, state procurement, and reserve fund quotas had been instituted, first of all, all land would be uniformly assigned by production teams to individual households under contract agreements. There would be no "land returned to families" who had owned the land before entering the commune as similar to what had been done following land reform. In cases where this had already been done, readjustments would have to be made, teams setting output for each and every plot and drawing up contracts in accordance with the manpower to work the land, with assignments being made to individual households taking into account whether the land was far away, close by, good or bad. Second was assignment to individual households of collectively owned draft oxen in accordance with how much land each individual household had contracted to farm, and combining nurture and use of the land. Taking back by private individuals of collectively owned draft oxen recompensed upon entering the commune or that had been newly developed after entering the commune would not be permitted. Private sale of collectively owned oxen and exchanges of oxen for horses would not be permitted either. Any such animals taken away would have to be returned, and the full value received for all animals sold would have to be returned. Third, in production teams where land and draft oxen had been well assigned, contract agreements would have to be signed. When fixed quotas on a household basis had been instituted, uniform distributions would continue to be made. Where contracting for guaranteed fulfillment of production, state procurement, and reserve fund quotas had been instituted, the reserve portion should be handed over in sufficient amount in accordance with the terms of the signed contracts.

After the cadre conference, the County CCP Committee assigned more than 300 cadre from the county, commune, and production brigades who were familiar with policies and understood how to set up systems of responsibility for production to organize work teams. Leadership comrades from the County CCP Committee led these teams in dividing work and assigning parts of it to teams and in training part members, cadres, work team heads, and activists in each commune, in the study of documents, summary of the lessons of experience, and in understanding the characteristics and methods of various kinds of systems of responsibility. With this as a foundation, the work teams went into each village to solve existing problems production team by production team. Now, 882 of the 913 production teams throughout the county that have instituted fixed quotas on a household basis and guaranteed fulfillment of production, state procurement, and reserve fund quotas have signed contract agreements. Gradual improvements in the system of responsibility whereby "double guarantees" are assigned on a household basis have settled people's minds and the enthusiasm for work of commune members has made an upsurge. The planting of spring-sown crops and summer production is being done solidly and actively.

Quota Contracting With Zhuang, Miao Nationalities

Kunming YUNNAN RIBAO in Chinese 6 Jul 81 p 1

[Article by Weng Wenliang [5040 2429 2733] and Lan Zhengyu [5695 2398 1342]: "Wenshan Autonomous Zhou Does A Solid Job of Cultivating Crops and Field Care; Signs Economic Contract Agreements and Eliminates Commune Member Fears of Troubles in the Rear"]

[Text] The Wenshan Zhuang and Miao Nationalities Autonomous Zhou has helped production teams and peasant households that have guaranteed reserve fund quotas on a household basis to sign economic contracts. As a result, the broad masses have eliminated their fears of troubles in the wake of a change in policies, and have actively done a good job of cultivation and field care. As of 18 June, the entire zhou had virtually completed its first weeding of dryland crops, and had weeded 736,000 more mu than the more than 290,000 mu weeded twice and three times as of the same period last year. Weeding of 388,000 mu of paddy rice has been done, 251,000 mu more than during the same period last year. The corn, rice, peanut, and sugarcane area that has been fertilized is 2.2 times the area fertilized as of the same period last year.

Last winter and this spring, a large number of production teams in Wenshan Autonomous Zhou instituted a system of responsibility for production whereby payment into a reserve fund was guaranteed on a household basis. However, quite a few commune members felt that no matter how fine this policy of getting enough to eat might be, it might not last very long. Some commune members feared that following increased output and increased earnings this year, their obligations to pay into the fund might increase. As a result, they clung to a mentality of planting season by season, and were unwilling to exert a lot of effort or spend much capital on contracted land. In light of this situation, the Wenshan Autonomous Zhou CCP Committee decided on a zhou-wide basis to sign economic contracts with production teams that had guaranteed payment into a reserve fund on a household basis, using these contracts as a means of assuring that there would be no change for a period of 3 years in withholdings to meet fund obligations, and that contracts for land, mountain forest, and such collectively owned means of production would remain unchanged for a fairly long period of time.

In order to do this work properly, ever since April the zhou has sent a total of somewhat more than 2,600 cadres to rural villages to publicize in one production team after another the pertinent documents of the Central Committee, while at the same time giving guidance to production teams and to commune members on the signing of contract agreements. Through the signing of contracts, they have helped production teams make equitable agreements about land, mountain forests, and large livestock animals, and they have implemented quotas on excess public grain, public accumulation funds, public benefit funds, and such reserve fund quotas. With regard to situations that arose previously in which collective property was privately divided, and such wrong methods as entering into contracts on the basis of land deeds, satisfactory initial arrangements have been made in accordance with policies. Following 3 months effort, more than 11,400 production teams throughout the zhou have signed contract agreements. This means 70.2 percent of production teams have contracted reserve fund quotas on a household basis. The remaining production teams are currently in process of entering into such agreements.

Once contracts have been settled, the people's minds are settled. Now, not only is the zeal for production of commune members rising higher and higher, but investment in production has also greatly increased. As of the end of May, 75,149 tons of chemical fertilizer had been sold in the zhou, 14,434 tons more than in the record year of 1980. For a long time Funing County has been a poor county dependent on loans, and last year state rescue funds spent on its production teams amounted to 200,000 yuan. This year, though this county's sales of chemical fertilizer were greater than during the same period last year, the masses did not put out their hands for a cent from the state.

9432
CSO: 4007/552

BRIEFS

FLUE-CURED TOBACCO PRODUCTION--By 20 June, Yunnan Province had transplanted flue-cured tobacco on some 888,000 mu, overfulfilling this year's quota for growing flue-cured tobacco by 4.5 percent. [Kunming Yunnan Provincial Service in Mandarin 1100 GMT 8 Jul 81]

AGRICULTURAL INFORMATION CONFERENCE--The first Yunnan provincial conference on agricultural information work was held in Yuxi from 7 to 13 July. This conference was sponsored by the provincial agricultural department and attended by cadres of all prefectures, autonomous prefectures and municipalities and some counties who were in charge of agricultural informationwork. The conference decided to set up agricultural information contact points and discussed the unified contents of agricultural information. The conference demanded that the understanding of the important significance of agricultural information be further deepened, the quality of agricultural information be improved, the sources of agricultural information be extensively opened up, contacts with units concerned like water conservancy departments, meteorological departments, statistics department and grain departments be strengthened, investigation and study be penetratingly conducted, agricultural information organs be perfected and the quality of agricultural information personnel be heightened. [HK180726 Kunming Yunnan Provincial Service in Mandarin 1100 GMT 20 Jul 81]

CSO: 4007/560

BRIEFS

GRAIN SALES--After reaping a bumper harvest of summer grain, people in rural Zhejiang have been enthusiastically selling food grain to the state. By 10 August, 982.7 million jin of grain had already been sold to the state. This was 443 million jin more than the same period last year. [Hangzhou Zhejiang Provincial Service in Mandarin 1040 GMT 15 Aug 81]

CSO: 4007/558

II. PUBLICATIONS

TABLE OF CONTENTS OF 'ZHIWU SHENGLI XUEBAO' NO 2, 1981

Shanghai ZHIWU SHENGLI XUEBAO [ACTA PHYTOPHYSIOLOGIA SINICA] in Chinese No 2, May 81 inside back cover

[Text] Studies on Qingfengmycin. VI. Submerged Fermentation of Qingfengmycin.....Wang Fude [3769 6534 1795], Lu Rongxin [0712 2837 2946] and Wei Zhongdi [7614 0022 5441], et al., all of the Shanghai Institute of Plant Physiology, Chinese Academy of Sciences (96)

Influence of Nitrogen Nutrition on the Physiological Properties of Azolla. I. The Effect of Nitrate Salt.....You Chongbiao [1429 1504 2626], Li Jingwei [6849 2529 0251] and Song Wei [1345 2607], all of the Institute for Application of Atomic Energy, Chinese Academy of Agricultural Sciences; Liu Zhongzhu [0491 0022 2691], et al., all of the Institute of Soil and Fertilizer, Agricultural Academy of Fujian Province (104)

The Influence of Carbon Sources on Formation and Growth of Root-tuber Callus of Sweet Potato (Ipomoea batatas L. Lam.) .....Lu Zhixiang [0712 5347 7449], Wang Mansi [3769 2581 4828] and Dong Jianguo [5516 1696 0948], all of the Plant Physiology and Biochemistry Group, Department of Biology, Nanjing University (111)

Studies on Photosynthetic Characters of Azolla.....Shi Dingji [2457 1353 1015], Institute of Botany, Chinese Academy of Sciences (120)

Effects of Tween-80 Treatment of Stomatal Movement and Transpiration of Maize Seedlings.....Xu Xudan [6079 2485 0030] and Zhu Hansu [6175 3211 4790], both of the Henan Research Institute of Biology (127)

Structure and Function of Chloroplast Membrane. VII. An Approach to Photosystem II Reaction Center Complexes on Wheat Thylakoid Membranes.....Hao Naibin [6787 6621 2430], Li Tongzhu [2621 2717 2691] and Lin Shiqing [2651 0013 7230], et al., all of the Laboratory of Photosynthesis, Institute of Botany, Chinese Academy of Sciences (133)

Inhibition of Export of Photosynthetes and Accumulation of Starch and Sucrose in Leaves.....Xia Shufang [1115 0647 5364], Yu Xinjian [2456 2450 1696] and Zhang Zhenqing [1728 2182 3237], all of the Shanghai Institute of Plant Physiology, Chinese Academy of Sciences (142)

Studies on Nitrogen-fixing Effectiveness and Its Characteristics in Cowpea Rhizobium sp. Colony Types of Strain 330.....Wu Yongqiang [0702 3057 1730] and Huang Weinan [7806 4850 0589], both of the Shanghai Institute of Plant Physiology, Chinese Academy of Sciences (150)

Nitrogen Fixation by Pure Culture of Rhizobium on Potato Medium .....Huang Weinan [7806 4850 0589], Tong Benxian [4547 2609 0103] and Liu Chengshen [0491 2110 2009], et al., all of the Shanghai Institute of Plant Physiology, Chinese Academy of Sciences (159)

Observation of the Regenerated Plants from Somatic Tissues of Hybrid Rice in Paddy Fields.....Sun Zongxiu [1327 1350 0208], Zhao Chengzhang [6392 2052 4545] and Zheng Kangle [6774 1660 2867], et al., all of the Plant Physiology Group, Rice Institute, Zhejiang Academy of Agricultural Sciences (166)

Effects of Gibberellic Acid and Indole-3-Acetic Acid on Abscission and Cellulase Activity in Abscission Zone.....Zhang Yinghuang [1728 2503 3874], Chen Jingzhi [7115 2529 3112] and Wang Huaizhi [3769 2037 2535], et al., all of the Shanghai Institute of Plant Physiology, Chinese Academy of Sciences (173)

Regulatory Effect of Urea on the Diterminal Oxidation of N-alkane with Candida tropicalis to Produce Dicarboxylic Acids. I. Inhibition and Repression.....Jiao Ruishen [3542 3843 6500], Shen Yongqiang [3088 3057 1730] and Lou Chunju [2869 4783 5648], et al., all of the Department of Microbiology, Shanghai Institute of Plant Physiology, Chinese Academy of Sciences (182)

Regulation and Control of Function and Phase Transition in Membrane by Composition of Biomembrane Lipid. II. Effect of Membrane Composition on α-Ketoglutaric Oxidase Activity of Mitochondria from Rice Sprouts.....Wang Yuqi [3769 5148 0796] and Wang Hongchun [3769 3153 2504], both of the Environmental Physiology Group, Shanghai Institute of Plant Physiology, Chinese Academy of Sciences (192)

Regulation of Nitrogenase Synthesis in Resting Cells of Rhodopseudomonas capsulata: Effect of Light.....He Yiqiu [6320 6654 4428], Chen Hancai [7115 3352 2088] and Song Hongyu [1345 7703 6657], all of the Shanghai Institute of Plant Physiology, Chinese Academy of Sciences (201)

Clonal Propagation of Orchids by means of Tissue Culture..... Wang Xiong [3769 3574], Chen Jichu [7115 1323 2806] and Liu Guiyun [0491 2710 0061], all of the Shanghai Institute of Plant Physiology, Chinese Academy of Sciences; Gu Meixian [7357 2734 0103] and Bao Cihua [0545 1964 5478], both of the Shanghai Botanical Gardens (207)

9717
CSO: 4007/509

TABLE OF CONTENTS OF 'XUMU SHOUYI XUEBAO' NO 2, 1981

Beijing XUMU SHOUYI XUEBAO [ACTA VETERINARIA ET ZOOTECHNICA SINICA] in Chinese
No 2, May 81 inside back cover

[Text] A Note on the Artificial Insemination of the Giant Panda.....Liu Wenxin [0491 4850 2450], Beijing Zoo (73)

Genetic and Heterotic Behaviors of Carcass Qualities and Visceral Characteristics of the Northeastern Indigenous and Landrace Breeds of Swine and Their Crosses. I. Carcass Qualities and Visceral Characteristics between the Northeastern and Landrace Breeds.....Xu Zhenying [6079 2182 5391] and Chen Runsheng [7115 3387 3932], both of the Northeastern Agricultural College; et al. (77)

Reproductive Pattern of the Bactrian Camel. Section 4. Parturition of the Camel.....Chen Beiheng [7115 0554 0077] and Kang Chenglun [1660 2110 0243], both of the Department of Veterinary Medicine, Gansu Agricultural University; et al. (85)

Studies of Some Economic Traits of Four Local Pig Breeds in Sichuan Province.....Duan Chengzhong [3008 6134 0022], Institute of Animal Husbandry and Veterinary Science of Sichuan Province, Chengdu, China (91)

Live Vaccine against Swine Paratyphoid from the Attenuated Smooth Strain C500 of Salmonella cholerae-suis.....Fang Xiaowen [2075 2556 2429], Li Yanglong [2621 2254 7150] and Huang Changbing [7806 2490 3521], et al., all of the Control Institute of Veterinary Bioproducts and Pharmaceuticals, Ministry of Agriculture (99)

Studies on the Quail-modified Fowl-pox Virus Vaccine..... Chicken Pox Vaccine Research Group*, Control Institute of Veterinary Bioproducts, Ministry of Agriculture (*Authors include Zhou Taichong [0719 3141 0394], Li Jigeng [2621 4949 1649] and Pan Baonian [3382 1405 1628], et al.) (107)

Modification of the Method of Cultivation of Lapinized Hog Cholera Vaccine Virus on Pig Kidney Cells in Rolling Bottles.....Sun Rong [1327 2837], Ling Qingxia [5677 7230 7209] and Zhai Zhonghe [5049 0022 0735], all of the Department of Biology, Beijing University; Chen Renzhong [7115 0117 6850], Fu Runzhen [0265 3387 3791] and Mo Sanqiu [5459 0005 3808], all of the Guangdong Factory of Veterinary Bioproducts and Pharmaceuticals (115)

Studies on Cross-reaction of Horses and Mules Infected with Pseudomonas pseudomallei and Pseudomonas mallei.....Lu Zhenchi [7120 2182 6282], Yuan Lunkang [5913 0243 1660] and Zhang Wodong [1728 2053 2639], et al., all of the Army Horse Health Institute, Guangzhou Military District (121)

Immunodiffusion Test for the Specific Diagnosis of Marek's Disease in Chickens. I. The Use of Marek's Disease Specific Antiserum.....Hu Xiangbi [5170 4382 3880], Xu Yiwei [1776 1355 3634] and Fu Dexia [0102 1795 7209], et al., all of the Harbin Veterinary Research Institute, Chinese Academy of Agricultural Sciences, Harbin, China (129)

Studies on the "Sore Foot Disease" of Cattle.....Qin Cheng [4440 8508], Zhang Baixiang [1728 4102 4382] and Zhang Shixian [1728 1102 6343], et al., all of Shaanxi Provincial Institute of Animal Husbandry and Veterinary Medicine; Wang Guangzhi [3769 1639 2535], Fu Zhiming [0102 3112 2494] and Wang Ruwan [3769 3067 1354], all of the Hanzong Regional Station of Animal Husbandry and Veterinary Medicine (137)

9717
CSO: 4007/506

TABLE OF CONTENTS OF 'DONGWU XUEBAO' NO 2, 1981

Beijing DONGWU XUEBAO [ACTA ZOOLOGICA SINICA] in Chinese No 2, Jun 81 p 106

[Text] Sino-Japanese Agreement on the Protection of Migratory Birds and Their Habitats..... (107)

Observations on the Distribution of Blood-forming Loci Throughout the Bone Marrow in Normal Dogs.....Chu Jianxin [5969 1696 2450], He Fusheng [0149 4395 3932], Cui Mingjiang [1508 2494 3068] and Li Jingde [2621 2529 1795], all of the Institute of Hematology, Chinese Academy of Medical Sciences (120)

Study on the Kinetics of Haemopoietic Cells--A Test for the Cell Cycle of Haemopoietic Tissue of Mice.....Gao Fengming [7559 7685 7686] and Zhao Naikun [6392 0035 0981], both of the Department of Biological Effects of Radiation, Laboratory of Industrial Hygiene, Ministry of Public Health, Beijing (124)

Haemopoietic Cell Cycle of Canine Bone Marrow and Neutrophil Released into Peripheral Blood.....Gao Fengming [7559 7685 7686], Zhao Naikun [6392 0035 0981], Jiang Hanying [5592 3211 5391] and Ge Shuqing [5504 3219 3237], all of the Department of Biological Effects of Radiation, Laboratory of Industrial Hygiene, Ministry of Public Health, Beijing (131)

Augmentation of Acupuncture Analgesia by Peptidase Inhibitor D-Phenylalanine in Rabbits.....Han Jisheng [7281 3444 3932], Zhang Yuanzhen [1728 1254 6297], Tang Jian [3282 0256] and Zhou Zhongfu [0719 0112 4395], all of the Acupuncture Anesthesia Research Group, Beijing Medical College (137)

The Depressor Responses and Mechanism of Cortical Stimulation in the Rabbit.....Huang Zhongsun [7806 0112 5549] and Jin Wenquan [6855 2429 3123], both of the Department of Physiology, Chongqing Medical College, Chongqing (146)

Effects of ME-Quingestanol on the Antifertility of Rabbits .....Yang Lizhen [2799 7787 3791], Institute of Physiology, Chinese Academy of Sciences, Shanghai (152)

Morphological Observations of Ookinete Formation in Rodent Plasmodium (Plasmodium berghei yoelii) in vitro.....Gao Xingzheng [7559 5281 2398] and Yuan Guoxuan [5913 0948 6693], both of the Department of Parasitology, Beijing Medical College (157)

A New Method for the Preparation of Gel Sheets and Simple Equipment for Vertical Slab Gel Electrophoresis.....Zhao Huizhi [6392 1920 2535] and Lin Wanlu [2651 8001 4389], both of the Institute of Biophysics, Chinese Academy of Sciences (161)

Dicrocoeliid Trematodes (Family Dicrocoeliidae) from some Birds of Guangdong and Yunnan Provinces, China.....Li Minmin [2621 2404 2404] and Zhu Hua [4376 5478], both of the Institute of Zoology, Chinese Academy of Sciences; Gu Changdong [7357 2490 2767] and Qiu Zhaozhi [6726 0340 4363], both of the Department of Biology, Nankai University, Tianjin (170)

On Two New Subspecies of Sinopotamon yangtsekiense Bott, 1967.....Dai Aiyun [2071 1947 0061] and Chen Guoxiao [7115 0948 1321], both of the Institute of Zoology, Chinese Academy of Sciences (178)

On the Geographic Distribution of Rodents in Northern Xinjiang .....Ma Yong [7456 0516], Institute of Zoology, Chinese Academy of Sciences (187)

Systematic Review of Chinese Sable, with the Description of a New Subspecies.....Ma Yiqing [7456 6654 3237], Institute of Natural Resources, Heilongjiang Province; Wu Jiayan [0702 1367 3508], Institute of Zoology, Shaanxi Province (195)

Scientific Notes

The Regularity of Fang Replacement in Elapidae and Viperidae .....Wu Ruimin [0702 3843 2404], Biology Teaching and Research Group, Fujian Medical University (197)

Migration and Distribution of Periodic Wuchereria malayi in the Jird, Meriones unguiculatus.....Zhu Suzhen [2612 4790 6297], Zhong Yongliang [6945 3057 5328] and Zhang Xuanming [1728 6693 2494], et al., all of the Sichuan Parasitic Disease Prevention and Treatment Institute (198)

Observation on Pathological Changes in the Lymphatic System of Experimental Infected Jirds with Periodic Form of Wuchereria malayi.....Zhong Yongliang [6945 3057 5328], Zhu Suzhen [2612 4790 6297] and Zhang Xuanming [1728 6693 2494], et al., all of the Sichuan Parasitic Disease Prevention and Treatment Institute (199)

A Large Flock of White Cranes (Grus leucogeranus) Wintering in China.....Zhou Fuzhang [0719 4395 3864], Ding Wenning [0002 2429 1380] and Wang Ziyu [3769 1311 3768], all of the Institute of Zoology, Chinese Academy of Sciences (179)

New Records of Bothid Fish from China.....Li Sizhong [2621 1835 1813] and Wang Huimin [3769 1920 3046], both of the Institute of Zoology, Chinese Academy of Sciences (201)

9717
CSO: 4008/404

TABLE OF CONTENTS OF 'ZHONGGUO XUMU ZAZHI' NO 3, 1981

Tianjin ZHONGGUO XUMU ZAZHI [CHINESE JOURNAL OF ANIMAL SCIENCE] in Chinese No 3, 5 Jun 81 inside back cover

[Text] The Need of Metabolic Energy for Growing and Finishing Pigs.....Yang Shixing [2799 6108 5281], He Zhendong [0149 2182 2639] and Tang Zhenyu [3282 2182 3768], et al., all of the Department of Animal Husbandry, Gansu Agricultural University (1)

Analysis of Estimated Quantitative Characteristics of Beijing Black and White Dairy Cattle.....Zhang Bin [1728 2430], Gu Yanyu [7357 3601 1938], Xu Huiru [1776 1979 1172], et al., all of the Beijing Dairy Research Institute (4)

The Effect on Feed Converting Rate and Digestibility of Fattening Pigs with Different Crude Fiber Levels.....Zhu Wanzhen [2612 1238 6297] and Qiu Zhihua [8002 6347 5478], et al., all of the South China Agricultural College (7)

The Trace Mineral Contents in the Milk of Beijing Black and White Dairy Cattle.....Wen Jie [2429 2638] and Geng Tieshan [5105 6993 1472], both of the Beijing Environmental Protection Research Institute; Jin Jiushan [6855 0036 0810], Beijing Agricultural University (10)

Test of Inseminating Sows with Low Dosage of Semen..... Hu Daocheng, et al. (11)

Test of Cock Semen Preservation.....Chen Shuqin [7115 3219 0530], Shan Chonghao [0830 1504 3185], Tao Caimei [7118 2088 5019], et al., all of the Department of Animal Husbandry, Beijing Agricultural University (12)

A Preliminary Study on the Types of Sichuan Native Pig Breeds and Their Principal Characteristics.....Long Tianhou [7893 1131 0624] and Duan Chengzhong [3008 6134 0022], both of the Sichuan Animal Husbandry and Veterinary Medicine Research Institute (14)

The Selection Method of the Ningxia Black Pig.....Wang Bailing [3769 2672 3781], Department of Animal Husbandry, Ningxia Agricultural Reclamation Research Institute (18)

Test on Eradicating the Oxytropis glabra Dc. with 2.4 D .....Wang Chongying [3769 6850 5391], Shaanxi Animal Husbandry and Veterinary Medicine Station (20)

The Effect on Egg Hatchability of a Breeding Hen Fed with Different Vitamin Feeds.....Ge Hongming (22)

Study on the Performance of Camelus bactrinus (1) (2)..... Zhang Peiye [1728 1014 2814], Nei Monggol Academy of Animal Husbandry; et al. (23)

Analysis of High Yielding Dairy Cows with over 10,000 kg Milk per Lactation.....Gu Yanyu [7357 3601 1938], Beijing Dairy Research Institute (25)

Test of Estrus Synchronization of the Water Buffalo with Prostaglandin (ICI81008).....Huang Linqi, et al. (27)

Feeding Experiment of Nutrient Requirements of Pigs of Shaoqing District.....Li Zhi (30)

Lecture Course: "All In and All Out" System and Preventing Chicken Diseases in Intensive Feeding.....Ai Wensen [5337 2429 2773], Department of Animal Husbandry, Beijing Agricultural University (33)

The Occurrence of Hoof Deformation and Its Effect on Production in Beijing Black and White Dairy Cattle..... Xiao Dinghan (35)

Study on the Growing and Fattening of the Meat Pig..... Zhang Yangzheng [1728 2254 6927], Yang Wenhui [2799 2429 1920] and Ma Guishan [7456 6311 0810], et al., all of the Liuzhou Agricultural School, Guangxi (39)

9717
CSO: 4007/505

TABLE OF CONTENTS OF 'QIXIANG' NO 6, 1981

Beijing QIXIANG [METEOROLOGICAL MONTHLY] in Chinese No 6, 10 Jun 81 p 1

[Text] Main Contents

The Persistent Heavy Rain during 12-25 August 1980 in Shanghai.....Qian Ziqiang [6929 5261 1730], Shanghai Central Meteorological Observatory (2)

Lag Correlations in Summer Wetness/Dryness Forecasting .....Xiang Yuanzhen [0686 0337 3791], Jiangsu Meteorological Observatory (4)

Objective Determination of the Points of Reversal in the Weather and Meteorological Element Sequences.....Chen Guofan [7115 0948 5400], Huang Wenjie [7806 2429 2638] and Li Ruiyun [2621 3843 5366], all of the Weather and Climatology Research Institute, Institute of Meteorological Sciences (7)

Discussions

Ascertaining the Plum Rain [Meiyu] Periods by Viewing the Situation as a Whole.....Li Xiaoquan [2621 1420 3123], Central Meteorological Observatory (9)

Ascertaining the Plum Rain [Meiyu] Periods from the Movement of the Static Energy "Front".....Fu Changfeng [4569 7022 6912], Henan Meteorological Sciences Research Institute (10)

Discussions and Contentions

Rainfall Fluctuation over the Sanjiang Plain in Relation to the Atmospheric Circulation.....Tian Zhaoxiang [3944 0340 4382], Li Guiyou [2621 6311 0645] and Peng Xiaoxia [1756 1420 1499], all of the Heilongjiang Bureau of Meteorology (13)

Research Notes

Some Problems of Weather Forecasting at County Meteorological Stations (III).....Peng Guangyi and Yin Xianxi (18)

Method of Forecasting the Mature Period of Wheat, Barley and Hull-less Barley.....Jiang Delong [5592 1795 7127] and Chen Chungen [7115 2504 2704], both of the Shanghai Meteorological Sciences Research Institute (23)

Local Weather and Climate

Cumulonimbus over Qinghai-Xizang Plateau.....Wu Hexuan [0702 7729 6513], Qinghai Meteorological Bureau (28)

A Course of Lectures on Medium-range Forecasting (II)

Graphs and Charts for Medium-range Forecasting.....Yu Heshu (39)

Basic Knowledge of Clouds

Cloud Detection by Radar.....Ge Runsheng (42)

Monthly Weather

March 1981--Drought in the North and Protracted Wet Weather in the South.....Li Yanxiang and Fan Yongxiang (45)

9717
CSO: 4007/517

END

JPRS 79016

18 September 1981

China Report

AGRICULTURE

No. 164

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JPRS 79016

18 September 1981

CHINA REPORT

AGRICULTURE

No. 164

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

Reports on Modernization of Rural Work
(NONGCUN GONGZOU TONGXUN, 5 Jul 81)..... 1

Increasing Food Yield, by Luo Yongquan
Solving Salary Problems, by Chinese Communist Committee
Brigade Money Management, by Li Shihui

'JINGJI YANJIU' on Grain, Diversified Economy
(Yan Ruizhen; JINGJI YANJIU, 20 Jul 81)..... 7

Briefs
Mechanical Seed Selection 17

Anhui

Briefs
Procurement of Summer Grain, Oilseeds 18
Anhui Prefecture Grain Purchases 18
Rice Harvest 18

Fujian

Briefs
Jianyang County Summer Grain 19
Fujian Rice Blast 19
Liancheng County Rice 19
Longxi Prefecture Grain 19
Fujian Tangerines, Tea 19
Fujian Prefecture Rice Crops 19

Guangdong

Briefs

Grain, Oil Procurement 20
Spring Tea Output Up 20

Guizhou

Briefs

Guizhou Autonomous Prefecture Improvements 21

Hebei

Zunhua County Benefits From Agricultural Structure Reform
(HEBEI RIBAO, 23 Jul 81)..... 22

Bumper Wheat Crop Reported in Dingxian Despite Drought
(Xuan Tieshuan, et al.; HEBEI RIBAO, 25 Jul 81)..... 24

Wheat Harvest in Handan Prefecture Increased Despite Drought
(Xing Ziwen, Li Tianzeng; HEBEI RIBAO, 22 Jul 81)..... 26

Heilongjiang

Briefs

More Families Raising Chickens 28

Jiangsu

Briefs

Jiangsu New Pesticide 29

Jiangxi

Briefs

Cotton Production 30
Jiangxi County Grain 30
Jiangxi County Rice Production 30
Jiangxi Prefecture Rice Production 30

Nei Monggol

Briefs

Forestry Conference 31

Quangdong

Briefs

Summer Harvest in Guongdong 32

Shandong

Briefs

Shandong Drought 33
Higher Cotton Output Expected 33

Zhejiang

Briefs

Zhejiang City Early Rice 34
Zhejiang County Cattle 34
Zhejiang County Autumn Crops 34

II. PUBLICATIONS

Table of Contents of 'ZHONGGUO SHOUYI ZAZHI', No 6, 1981
(ZHONGGUO SHOUYI ZAZHI, No 6, 1981)..... 35

Table of Contents of 'NONGYE JIXIE' No 7, 1981
(NONGYE JIXIE, No 7, 1981)..... 37

HONG KONG MEDIA ON CHINA

Sichuan

Tan Qilong Reports on Flood Investigation
(HSIN WAN PAO, 19 Aug 81)..... 39

ABSTRACTS

AGRICULTURE

ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA], No 3, 1981..... 40

AGRICULTURAL EXPERIMENTATION

SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES], No 6, Jun 81..... 48

ENTOMOLOGICAL STUDIES

KUNCHONG ZHISHI [ENTOMOLOGICAL KNOWLEDGE], No 4, 1981..... 51

FISHERIES

SHUICHAN XUEBAO [JOURNAL OF FISHERIES OF CHINA], No 2, 1981..... 53

PHYTOPATHOLOGY

ZHIWU BINGLI XUEBAO [ACTA PHYTOPATHOLOGICA SINICA], No 2, Jun 81..... 56

PLANT PROTECTION

ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA], No 2, Jun 81..... 59

REPORTS ON MODERNIZATION OF RURAL WORK

Increasing Food Yield

Beijing NONGCUN GONGZOU TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 7, 5 Jul 81 pp 17-18

[Article by Luo Yongquan [5012 3057 3123], assistant researcher of the Chinese Academy of Agricultural Sciences: "Strategic Significance of Developing Woody Edible Oils"]

[Text] Editor's note: To open up the thoughts of the broad numbers of cadres and adapt to learning and using science and the new situation of hastening the development in production, this magazine has established a special column entitled "Discussions and Suggestions" to publish some of the suggestions and articles of discussion on developing our nation's agriculture written by scientists and agricultural workers. We welcome the support and enthusiastic response from comrades.

Population, food, energy and the ecological environment are the four major problems of popular concern in the present world. Agriculture is directly related to these four problems. The focus of these problems are centered around the problem of food grains.

Our nation's agricultural modernization requires the realization of the goal of an average of 1,000 jin of food grains per person. The way to increase food grains is to expand the area of cultivated land and to increase the unit area yield. At present, the area of wasteland which can be reclaimed in our nation is very limited. According to estimates, there is a total of over 200 million mu which can still be reclaimed. Large scale reclamation requires a large investment, and estimates based on our nation's present economic situation show that by the end of this century, about 100 million mu of land can be reclaimed at most, less than half the area of cultivated land which will be occupied by nonagricultural sectors during the same period. Therefore, the area of cultivated land will actually lessen. Thus, increasing the unit area yield is still the basic measure to solve our nation's ever increasing population and maintaining a definite level of food grains. But, increasing the unit area yield is limited by many conditions and high yields have definite limits.

Our nation now has 3 to 4 billion mu of grasslands and developing livestock production in a big way is fundamentally an important way to solve the problem of food. But the natural condition of most of our nation's grasslands is poor and the productivity of livestock products is low. At present, over 90 percent of our nation's livestock products come from old farming regions. Thus, although the grasslands should be rebuilt and utilized in a big way to increase as much as possible their productivity, but for the short run, we must not be overly hopeful.

The 1.8 to 1.9 billion mu of deserts, gobis and the 4 to 5 billion mu of the Qinghai-Xizang Plateau and other high and cold mountain regions are limited by natural conditions and are even more difficult for large-area rebuilding and utilization within a short period.

Estimates according to the various above situations show that by the end of this century, the per capita average yield of food grains in our nation will reach about 800 jin at most, and there will be more problems in war and during natural disasters. Fundamentally to solve our nation's problems of food grains, new ways must be opened up and new strategies must be used.

The old farming region of the great southwest, east of the line from the southern tip of Daxinganling to the eastern part of our country's Qinghai-Xizang Plateau has a total area of about 7 billion mu. This region has rich natural resources of light, heat, water and soil. Species of life forms are plentiful and many types of crops can be developed. At present, 1/3 of this region (2.3 to 2.4 billion mu) is ordinary farmland and nonagricultural land in cities and villages, the remaining is basically hilly mountain regions and water surfaces. Most of the forest vegetation in this hilly mountainland, especially the Guannei Region, has been destroyed, the natural resources of water, sunshine and heat which falls upon these surfaces are mostly wasted and they even cause frequent disasters. This is a pitiful and irrational situation.

Our nation has 1 billion people including 800 million farmers. If food grains are not increased, the consumption of the population will be a heavy burden, which could even become a factor affecting political stability and unity. If the enthusiasm of the population can be fully mobilized, the people can become a manpower resource unique in the world. About 95 percent of this manpower is distributed in the old farming regions of the great southeast. The major shortcomings of these hilly mountain regions are the relative infertile quality of the soil and soil conditions, and poor water conservancy conditions; these are the shortcomings. If woody edible oil crops that are relatively tolerant to infertility and aridity (such as chestnut, walnut, persimmon, jujube, oil tea camellia, coconut, tung oil tree, olive...etc) and if mulberry, bamboo, fruits, herbs and miscellaneous grains and such special economic crops can be planted by suiting measures to local circumstances, and interplanted with grazing grass, tea, legume and miscellaneous food grains; and at the same time developing herbivorous animals like cattle, sheep, rabbits, geese and fish in a big way; and implementing diversification in a three dimensional agriculture, then the superiority of our nation's present manpower, material strength and natural resources can be fully developed to utilize advantages, to supplement shortcomings and to hasten the development of the five sectors of agriculture, forestry, livestock production, sideline production and fishery and gradually change the internal

structure of agriculture and the composition of foodstuffs; converting the singular agricultural economy into a diversified comprehensive agricultural economy. At the same time, greening of unclaimed mountains can be carried out to realize forestation of the land, strengthen retention of water and soil, revive and create a superior ecological environment, and change the vicious cycle to a beneficial cycle. Woody edible oil plants and grazing grass are perennials, after planting once, they can be continually harvested for several decades and even several hundred years. Thus, they conserve more labor force, fertilizers, and water than agricultural crops, they help solve the problems of agricultural energy and timber, and are more beneficial in strategically preparing against disasters. Therefore this is an effective measure that brings many benefits, requires little investment, produces a large gain, and changes passive factors into active factors. It is an important strategic direction in developing our nation's agriculture.

According to estimates, there are 2 billion mu of hilly mountain regions and land in small flats around houses and by the roadsides for planting special crops of woody edible oil plants and fruits, bamboo, herbs and miscellaneous grains. During the initial 20 to 30 years, 1.2 to 1.3 billion mu can be developed and utilized, and this will increase the per capita area of photosynthesis in our nation by onefold. The total yield of food grains for the whole nation can be increased 1/4 to 1/2 on the foundations of traditional agriculture, and the goal of 1,000 jin of food grains per person can even be surpassed.

Taking chestnuts and walnuts as examples, their adaptability is strong, and they can be planted in most regions of our nation. Their fruits are rich in nutrition and they can replace ordinary food grain oils and they are also welcomed on the international market. Superior varieties, resulting from grafting, can grow into trees in 10 years under good management. Each tree can produce 20 to 30 jin of fruits. Twenty-year-old trees can produce 50 to 60 jin of fruits. High yielding trees can produce 100 to 200 jin. If each person in the farm village plants one woody oil-bearing tree with care (2 to 3 trees in mountain land) and interplants grazing grass to develop livestock production, then within 10 years, efforts can be made to realize an average of 10 (20 to 30 in mountain land) woody food trees and two oil-bearing trees per person, than after 20 to 30 years, each person can enjoy 400 to 500 jin of foods from woody plants and 20 to 30 jin of woody vegetable oil, with the addition of 50 to 100 jin of dairy products and 10 to 20 jin of meat products and the food grains harvested from ordinary cultivated land, the level of a thousand jin of food per person can be surpassed. The nutrition of the people can be visibly improved. At the same time, planned parenthood must be strictly implemented and the problems of food for our citizens can be fundamentally solved.

Solving Salary Problems

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 7, 5 Jul 81 p 25

[Article by the Chinese Communist Committee of Tengfeng County, Henan Province: "Reduce the Number of Managerial Workers To Lighten the Burden of Farmers"]

[Excerpt] After the responsibility system was popularly implemented in farm villages, some new problems emerged concerning the salaries of cadres and brigade personnel.

There are four outstanding problems: First, the salary of cadres still follows the past method of "subsidies for fixed work" or "actual record of actual absence." This method is not directly related to the quality of work, the practice of "regardless of working or not, everyone eats from the big pot" and "regardless of increased yields or not, everyone gets money for food grains" still persists. Second, after implementing the responsibility system, the number of agricultural workers has dropped drastically, but relatively managerial workers (i.e., supplementary workers and marketing representatives of brigades and teams, civilian teachers, brigade operated industrial and sideline workers, health workers, broadcasters who are workers at miscellaneous jobs) have increased in number. In 1980 according to surveys of the four brigades of Ludong, Cezigou, Gujiahe, Zhangcun, managerial workers constituted 26.6 percent of the total number of workers. The commune members said discontentedly: "Harvesting a walnut but getting a jujube, the life of the commune member can never make one wealthy." Third, the cadres and the commune members alike are each assigned a plot to be responsible for the cadres,draw money for food grains according to the old way and there is a tremendous discrepancy between the income of the cadres and that of the commune members, the masses have complained a lot. Fourth, the broad masses urgently require a skillful management agency to change the past situation of an overly large agency and superficial business attitude.

Therefore, rationally solving the salaries of the cadres and the subordinate personnel of the brigades, reducing the number of managerial workers, lightening the burdens of the commune members have become outstanding problems in stabilizing and perfecting the production responsibility system.

Brigade Money Management

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 7, 5 Jul 81 p 31

[Article by Li Shihui [2621 1102 6540]: "The Method of Brigades Managing the Accounts and Money of Production Teams Is Good"]

[Text] Ruian County in Zhejiang Province has popularized the method of the brigade managing the accounts and money for production teams and this method has been welcomed by all.

The Origin of the Brigade Managing Accounts and Money for Production Teams

Beginning in 1961 when the commune system was implemented in the farm villages, the brigades established a general accountant and a general cashier to manage the accounts and money of production teams. At that time, the accounting unit increased suddenly from 868 to 8,376 and there was a shortage of accounting personnel. Some brigades employed elementary school teachers and store personnel as "fill-in" personnel. Because these people were not skilled in the accounting operation and because they had their own jobs, many "confused accounts" emerged. Thus, the system was changed so that the brigade accountants established separate accounts for the production teams and managed the accounts for the production teams. Some production teams that were relatively close to brigades felt that it was not convenient to manage accounts and money at two places, and thus sent their cash to the general cashier of the brigade for management. Therefore, the method of "managing two things" emerged. After a period of practice, this method gradually became popular throughout the entire county.

The Method of Brigade Managing Accounts and Money for the Production Teams

Brigades that manage accounts and money for production teams must possess the following conditions: 1. The general accountant and the general cashier of the brigade must have a definite job standard and capability, they must be fair so that the commune members can trust them. 2. In implementing "managing two things," the brigade must have the economic foundation of a definite income from the brigade enterprise, the cadres of the brigade must not be selfish, they must conscientiously be responsible for managing the accounts and the money of the production teams well.

When the brigade manages the accounts and nomey for the production teams, it must respect fully the autonomy of the production teams, cash expenditures and distribution must be decided by democratic discussion among the commune members of the production teams and the decisions are handed over to the general accountant and the general cashier of the brigade for execution. The general accountant and the general cashier have the right to advise against or stop any violation of policy or destruction of the system. The accountant and the cashier serve supervisory duties to help the production teams manage their finances well. In the method of management for the production teams, there are two forms of management based on realizing benefits for production, for management, and for the convenience of commune members: One method is "to bring up," this means the accounts and cash of the production teams are kept in the financial office of the brigade at a central locality. The production team assigns a specific person (usually the financial director) to be responsible for financial income and expenditure and to deal with the accountant and the cashier. Chemical fertilizers and farm chemicals rationed by the state are accounted for by the supply and marketing cooperatives on a noncash basis. When the production team needs to buy things on the market, it can go to the general cashier of the brigade any time to withdraw cash. After the purchases have been made, the withdrawal is written off and entered and handed over to the accountant for recording. According to typical surveys, general noncash accounting constitutes about 70 percent of the expenditures and cash constitutes about 30 percent. Commune members borrowing less than 5 yuan are approved by the general accountant of the brigade. Borrowing over 5 yuan requires democratic discussion by the commune members before the general cashier can make the loan. To be convenient for the commune members and to benefit production, the general accountant and the general cashier hold regular office hours during morning, afternoon and evening shifts. Each team that comes is served promptly. At the end of each month, the accounts are made public to the commune members of the production teams. The second method is "to walk down." For a production team that lives over a scattered area and that takes care of its accounts but not its cash, the general accountant can go periodically to the production team to record the accounts, report the accounts, balance the accounts, publicize the accounts and implement the "three on site procedures" to balance the accounts on site.

Salaries of the general accountant and the general cashier should be determined according to their ability and the number of production teams they serve. The salaries of the general accountant are of two kinds: One is a complete contract, the salary is set at the average wage for equivalent jobs and paid by every production team in equal shares. The second is a complete contract with subsidies. The general accountant of Jiansheng Brigade contracts a total of 2,300 work points a year and each accounting worker participates in labor for 100 work points, each month he is subsidized 15 yuan. The general cashier receives the same.

The Benefits of Brigades Managing the Accounts and Cash for Production Teams

1. Brigades managing the accounts and cash for the production teams have solved the difficulty of a shortage in financial and accounting personnel. Ruian County has 10,380 brigades and production teams and also over 2,300 commune and brigade enterprises, all require independent accounting. If each accounting unit is assigned an accountant, the entire county would need a total of 12,680 accountants, but the county only has 5,000 accountants, which is 40 percent of the required number. Through management by the brigade for the production teams, over 900 brigade accountants manage the accounts of 6,227 production teams and 1,500 brigade-operated enterprises, each accountant takes care of the accounts of 9 units, basically solving the problem of the accountant shortage.

2. This method is beneficial for strengthening financial management. The accountants of production teams are subsidized for absence from work for only 20 to 30 workdays. They must participate in competition to earn work points through labor. Therefore, they can only do their accounting work during rainy days or at night, sometimes, an account is produced only every month or each quarter, it is difficult for them to do "daily closings and monthly closings." A lot of mistakes are made, many items are forgotten or missed and the accounts are often confused. The brigade managing the accounts of the production teams can perform "daily closings and monthly closings" and the accounting will not include the five invalid entries: unaccounted slips, lack of authorization, lack of signature of approval, unauthorized change of bills, vouchers, invoices, inconsistencies on tickets for merchandise. The general cashier can also help the production team arrange and regulate capital flow, strictly control irrational expenditure, assure the realization of distribution at year end. In the past, some teams had confused accounts and were seriously in debt, after the brigade managed the accounts and cash for them, the production teams have not had any more extra expenditures for 10 years.

3. This method is beneficial for stabilizing and improving accounting personnel. After the implementetion of brigades to manage the accounts and cash for production teams, there was more accounting work, forcing accounting personnel to study their tasks and improve their efficiency. At the same time, when the brigade managed the accounts and cash for the production teams, changing the accounting department or system will affect several units and this must be approved by everyone. This is very beneficial in stabilizing the accounting teams.

4. This method has reduced the burden of the farmers. The entire county has 5,000 accountants, their total salary in work points is 600,000 workdays, each family supports 3 work points. If each accounting unit is assigned an accountant, each family will have to support 5.6 work points. Therefore, brigades managing the accounts and cash for production teams have reduced the burden of the farmers and can also assure that the party's policies and guidelines are thoroughly implemented.

9296
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'JINGJI YANJIU' ON GRAIN, DIVERSIFIED ECONOMY

HK040727 Beijing JINGJI YANJIU No 7, 20 Jul 81 pp 40-45

[Article by Yan Ruizhen [0917 3843 3791] of the Agricultural Economic Department of the Chinese People's University: "A Tentative Discussion on the Interrelation Between Grain Production and the Diversified Economy"]

[Text] Objective laws which are independent of human will govern the relationship between the grain production sectors and sectors of the diversified economy. Only by grasping these laws can we clearly understand the economic roots of the present irrational structure of our agricultural production, formulate a rational structure of agricultural production which is suited to the concrete economic conditions in our country and create the conditions for the early realization of this structure. This task has great significance for overcoming blindness, strengthening consciousness, preventing arbitrary directives and correctly implementing our present efforts to readjust the structure of agricultural production.

I

Two objective laws govern the interrelation of agricultural production sectors: First, the coexistence of the specialization of agricultural production and the all-round development of diversified economic sectors. Second, the level of development of the grain production sectors determines the scale and rate of development of the diversified economic sectors to a great extent.

Like other material production sectors, with the growing progress of social productive forces, agricultural production, as it reaches a certain stage, takes the road of social division of labor and specialization of production and consequently, specialized cultivation areas appear in agricultural production. The emergence of specialized agriculture is a great progress in agricultural production. It is beneficial for realizing geographical division of labor in agricultural production and for bringing regional strong points into play; it is beneficial for the workers to grasp the laws of agricultural production, accumulate production experience and improve labor technique; it is beneficial for speeding up the realization of agricultural mechanization with limited investment; it is beneficial for increasing the per unit area yield of agricultural products and rate of commodity production. However, agricultural production is also different from other material production sectors. That is, the specialization of its production exists side by side with the all-round development of the diversified economic sectors.

The reason why agricultural production must realize the all-round development of the diversified economic sectors is first determined by the diversity of the people's need for agricultural products. People do not only ask for grain but also for meat, oil, vegetables, sugar, cotton, hemp, tobacco, tea and others. All these products have the common characteristic of being bulky, perishable, hard to store and difficult to transport. It is better that they be produced in places where they are consumed. Our present rural economy is different from that of the highly developed capitalist countries. Our per capita production of agricultural products is still low and the agricultural population constitutes a significant majority of our population (84 percent of the total population). Thus, agricultural products turned out every year are mostly for the countryside's own consumption and the rate of commodity production is low. At the same time, communications and transportation are not very well developed. This problem is particularly acute in the hilly regions which constitute about two-thirds of our territory. Under such conditions, if we do not realize all-round development of the diversified economic sectors and engage in a single specialized cultivation, it will bring serious difficulties to the people's livelihood.

The reason why diversified production must be adopted in agriculture is also determined by the peculiarities of agricultural production itself. First, land is the most basic and irreplaceable means of production in agriculture. Every country, area or enterprise normally possesses land of varying soil constitution and which is put to various uses. Without engaging in diversified production, regional strong points cannot be brought into play and land cannot be fully and rationally utilized. Second, agricultural production is distinctly seasonal. There is great risk of missing the farming season during the busy period and during the idle period, manpower and the means of production might not be properly utilized. However, different production sectors have different busy and idle periods in a year. Therefore, by proper coordination of the work of production sectors with complementary schedules, one will be able to make full use of both human talent and material resources. Third, various agricultural production sectors are interdependent. For example, crop-raising provides animal husbandry with fodder while animaly husbandry provides crop-raising with fertilizer and draught animals and fully makes use of the by-products of crop-raising. Forestry not only provides animal husbandry with fodder but can also remold weather, regulate rainfall, conserve soil, conserve water, give protection from wind and prevent soil erosion. It plays a significant role in protecting grazing land, grassland and agricultural land and developing irrigation. The development of fishery, in turn, creates conditions for using soil from ponds to fertilize fields and trees. It is beneficial for both agriculture and forestry. Industry operated by communes and brigades turns primary products provided by agriculture, forestry, animal husbandry and fishery into products that people can directly consume. By-products of such processing are also used in local agricultural production. Fourth, various sectors of agricultural production require various lengths of time to complete a production cycle. By diversified production, sectors with short cycles can be used to support those with long ones and income and expenditure in different months of the year can be balanced. Thus, capital turnover is accelerated and agricultural reproduction can be expanded.

Concluding from the above discussion, all-round development of diversified economic sectors in agriculture has the following advantages: First, it maintains and

regulates the internal proportional relationships in agricultural production, smoothens the transformation process of energy and material, maintains agricultural econological balance and continuously improves the environment and conditions for agricultural production. Second, all important elements of agricultural production, including land, natural resources, manpower, means of production and by-products are fully and rationally utilized. Unit production cost is low; agricultural labor productivity is high and economic results are good. Thus, it is able to improve commune members' livelihood and enliven the whole rural economy while continuously increasing the accumulation of the collective economy. The all-round development of diversified economic sectors in agriculture not only creates very favorable natural conditions for reproduction among the various sectors, but also creates very favorable economic conditions for agricultural reproduction to be perpetuated in a healthy cycle. We must take diversified production and all-round development as strategic measures to make our rural economy prosper.

Some people think that specialization in agricultural production and all-round development of the diversified economy are mutually exclusive and dobut whether they can coexist. This is, in fact, a misunderstanding. The coexistence of specialization in agricultural production and overall development of the diversified economy has the following meanings: First, realizing the all-round development of a diversified economy on a national scale by specialization in production, with various regions and production units engaging in their own specialized production; second, within a region or production unit, the combination of specialization and diversified economy through the rational coordination of the leading sectors and the supplementary sectors. This means that the leading sectors embody the orientation of specialization, while the diversified supplementary sectors embody the overall development of a diversified economy. The two are mutually opposed yet mutually united. Thus, this assimilates the strong points of both, while avoiding the problems that arise when the two are developed in isolation.

However, the all-round development of a diversified economy does not mean that all agricultural production sectors are equal in importance. Among all the agricultural sectors, grain has a particularly important place. It is the basis of agricultural development. Stalin once called grain the "foundation of the foundation." This is because: First, agriculture is the production sector which provides the people with the means of livelihood. Among the products supplied by agriculture, such as grain, cotton, oil, meat, leather, fruit and vegetables, grain is the most basic means of livelihood. It is only after people have satisfied their need for grain and only when they have suplus land, manpower and means of production that they can engage in diversified economic production outside the production of grain; that there can be development of other agricultural sectors. That is to say, the scale and rate of development of the diversified economy is dependent on the level of development of grain production. This is because among all agricultural products used for food and daily consumption, grain is not only the easiest to produce and the easiest to store but also the production sector with the highest productivity. Take animal husbandry for example: When the animals process fodder into animal products, around 70 to 80 percent of the energy is lost. Based on the production level in our country, it takes 6 jin of grain to produce 1 jin of lean meat. While 6 jin of grain is enough for a person to live for 6 days, 1 jin of lean meat cannot perform such a function. Second, some production sectors, such as animal husbandry, fishery and some rural industries, directly use grain for raw material. They are even more directly dependent on the grain production sector.

Thus we can see that whether a country or area can realize diversified production or not, how large is the scale of development of various production sectors, what are the leading sectors and how production is structured are not dependent on the people's subjective will but on the level of development of grain production--that is, the scale and rate of its development--to a large extent.

II

An inherent balanced relationship exists between grain production and the diversified economy. Commensurate to a specific development level of the grain production sector, a particular scale of diversified economy comes into being. If the development level of the former is high, it is possible to allocate part of the surplus land, manpower, means of production and grain to develop the diversified economy. On the contrary, if the level of development of the grain production sectors is low and it is unable to satisfy the people's needs, the situation wherein land for grain production squeezes out forests, grassland and land for aquatic production and economic crops will emerge.

Looking at the history of agricultural development in our country the agricultural production structure before the spring and autumn period and the period of the warring states resembled that of the present agriculturally-developed European and American countries characterized by the combination of agriculture, forestry and animal husbandry, with forestry and animal husbandry also occupying positions of importance. The basic reason why our structure later changed into one of a simple grain economy was that although the total land area and the latitude of the geographical location of our country is basically similar to Europe and America, arable land in those countries constitutes more than half of the territory while it is only one-tenth of the land area in our country. Our population is also far larger than that of Europe and America. With the continuous increase in population, grain became more and more insufficient. The main effort had to be devoted to grain production. Under the conditions of a low level of grain cultivation at that time, the easiest way to increase grain production was to increase the cultivated area. The usual rule was: first, forests were destroyed to open up new land. Forestry was gradually damaged. Then, the grasslands were indiscrimately cultivated. Grain stalks were also largely used as fertilizer and fuel. Thus, animal husbandry was also damaged. The entire agricultural economy was transformed into simple grain production.

Thus we can see that during certain periods, grain production sectors can promote the overall development of the diversified economy while during others, it can obstruct or even squeeze out the diversified economy. Whether it plays the role of promoting or squeezing out the diversified economy depends on whether per capita grain distribution in real terms is higher or lower than the minimum required per capita grain distribution.

The minimum per capita grain requirement means the minimum amount of grain consumption a normal person needs for his subsistence in 1 year plus the seeds needed to ensure the reproduction of this amount of grain. When the per capita grain distribution in real terms suprasses the minimum per capita grain requirement, the grain production sectors will have extra capacity to promote the overall development of the diversified economy. During such a period, the natural and economic

conditions for agricultural reproduction are placed in a healthy cycle. On the other hand, when per capita grain distribution in real terms is lower than the minimum per capita grain requirement, the grain production sectors will squeeze out the diversified economy and the natural and economic conditions for agricultural reproduction will deteriorate.

The minimum per capita grain requirement in various regions differs according to the species of grain cultivated and crop period. Based on present conditions in our country, the average figure should be somewhere between 500 to 550 jin of unprocessed grain. For a long time, per capita grain distribution in real terms in our country had been around 600 jin of unprocessed grain, quite close to the minimum per capita grain requirement. The balance between the two was a very fragile one. The interference and sabotage of Lin Biao and the "gang of four's" extreme "leftist" line and our own shortcomings and errors in our work made growth of grain production very slow while the national population has been increasing and per capita grain distribution in the rural areas has dropped. The result was: The balance between the grain production sectors and the diversified economy which was established during the 1950's was not maintained. As economic laws took their natural course and ruthlessly showed their effect, grain production squeezed out the diversified economy in many places. The "gang of four's" indiscriminate criticisms, struggles, destructions and crusades further aggravated this process.

For quite some time, people have been talking about the problem of the destruction of ecological balance. The immediate cause of the destruction of ecological balance lies in the irrational structure of agricultural production while the economic roots of the irrational structure of agricultural production lies in the imbalance between per capita grain distribution in real terms and the minimum per capita grain requirement. Thus we can see that to maintain ecological balance depends on maintaining the balance between per capita grain distribution and the minimum per capita grain requirement. Balance of the latter is a guarantee for maintaining the balance of the former. Without the latter balance and talking about ecological balance in isolation, preventing the destruction of the ecological balance will only be empty words.

Maintaining the balance between per capita grain distribution and the minimum per capita grain requirement is an extremely important question both in agricultural economic theory and in the practice of leading agricultural production. A very important task in agricultural production leadership is to fully take advantage of the socialist system's strong point of planned production and consciously realize this balance through constant readjustment.

To more clearly explain this point, we can use data gathered from Xishuangbanna as illustration. In terms of agricultural production, Xishuangbanna is divided into two areas: flatland and hilly land. During the early part of the 1950's, flatland was mainly devoted to grain production. Grain output was above the subsistence level and the surplus was supplied to the hilly region. Hilly land was mainly devoted to the development of forestry and the cultivation of economic crops, such as tea, shellac and tropical fruits. The local residents were very keen on protecting their forests. They conserved the rich tropical forests and never cut down trees unless it was necessary. Every time a baby was born, they planted 20 to 30 new "iron-knife trees" (a fast-growing tree good for firewood) for fuel.

Thus, there was all-round development in the area's diversified economy and ecological balance was maintained. Xishuangbanna then was surrounded by green mountains and rivers and was a sanctuary of rare birds and beasts. It was a very precious natural genetic reservoir of our country. After more than 20 years of development, the situation has changed. Population in this area increased by 200 percent (half from natural birth, half from immigration) while there has been no corresponding increase in the level of grain production. Consequently, per capita distribution of grain in real terms gradually went down and the original balance transformed into an imbalance. The nearby areas did not have the capacity to make up for the grain shortage in this area and even if it was possible to import grain, because of distance and poor transportation, per jin cost of grain (including transportation expenses) would reach around 1 yuan. Thus, to solve the grain problem, Xishuangbanna had to take the simple way out--increase the cultivated area of grain. Therefore, destruction of forests to open up new land and build fields for grain production in hilly regions took place on a wide scale. To aggravate the situation, their method of grain production was also very backward. It was purely slash-and-burn cultivation and large tracts of land were used for low-yield cultivation. For every year in which they burned down forests to plant, these lands were left unused for 2 subsequent years. This became a vicious circle. Furthermore, for every mu of land reclaimed on the hills which had a per mu yield of merely 100 or 200 jin, 3 mu of forest had to be destroyed. This resulted in serious soil erosion. According to statistics, the forest area in Xishuangbanna in the 1950's was 13.8 million mu. At present, it has been reduced to 2.64 million mu. Even the natural conservation areas prescribed by the state were not saved from the destruction. Many precious tropical virgin forests were lost forever.

Between the two economic indices of minimum per capita grain requirement and per capita grain distribution, the former is relatively static, while the latter is subject to constant change. Actual distribution is computed by multiplying grain cultivation area by unit production and dividing the product by the total population. Therefore, it changes with the movement of grain cultivation area, per unit production and the population. For more than 20 years, our major mistake in arranging the structure of agricultural production was, however, not in devoting too much effort to grain production, but in:

First, we did not foresee or firmly grasp the trend of change in per capita grain distribution resulting from changes in population and total grain output in the whole country or in an area during a specific period of time. We did not make plans for constant readjustment, for increasing actual per capita grain distribution by population control and increase of grain production and for keeping the balance between the two.

Second, we adopted the wrong method on the question of increasing grain output. Its manifestations were: (1) We did not take notice of regional peculiarities and uniformly applied the policy of a single-crop rural economy with grain as the principal product. The result was regional strong points were not thought into play and resources were not rationally utilized or were even destroyed. (2) To increase grain output, we took the road of vast cultivation area and low output or expanding grain cultivation area without increasing per unit output. The little increases attained in total grain output were achieved at the expense of forestry, animal husbandry, fishery and economic crop-raising. The masses called this "taking

grain as the key link and eliminating all others." (3) We put grain production in opposition to the diversified economy. We saw only the decisive role of grain and did not see that all-round development of the diversified economy could also promote grain production. We did not realize that abundant products from the diversified economy could relive the pressure of the demand for grain. We naively thought that "if grain yield cannot exceed the plan, we have no time for other tasks" and single-mindedly grasped grain production. As a result, the diversified economy was eliminated and grain production also suffered without the support of the diversified economy. At present, in many high-yield areas engaged in single-crop grain production, production has remained stagnant for a long time. This is a good illustration of the above point.

III

The maintenance of balance between actual per capita grain distribution and minimum per capita grain requirement only shows that various agricultural production sectors are able to maintain their original balance. It does not necessarily mean that the agricultural production structure during this period is rational.

A rational agricultural production structure must meet the following four requirements:

First, it must be able to meet the people's nutritional need for various agricultural products. According to a scientifically formulated standard and the peculiarities of our country, every person needs at least 2,400 kilocalories of energy and around 50 grams of protein each day. Of these, one-eighth to one-seventh of the energy and one-eighth to one-seventh of the protein are supplied by food from animal products. Computed according to this standard, the minimal per capita distribution of major agricultural, animal and fishery products in a year is as follows:

(Unit: jin)

Products	Desirable Amount	Actual Amount in 1978
Fish	30	10.0
Grain	800	636.0
Oil	12	4.8
Sugar	20	7.1
Vegetables	300	--
Meat	40	15.0
Eggs	15	4.0
Milk	20	1.9
Fruits	20	13.0

Second, it must be able to maintain ecological balance and promote coordination and mutual enhancement among agriculture, forestry, animal husbandry, sideline occupation, fishery and other sectors (particularly between grain and the diversified economy). To achieve this, 30 percent of our land area must be covered by forest. This percentage must be higher in mountainous areas (40 percent) and lower in hilly areas (20 percent). On plains, the percentage must be higher than

10 percent. To maintain the production scale of the above economic crops and forestry, animal husbandry and fishery, grain production sectors must not only be able to provide the minimum per capita grain requirement of 500 to 550 jin of unprocessed grain, but must also be able to produce an extra per capita amount of 250 to 300 jin of raw material to support the production of animal husbandry and other production sectors. Thus, the level of development of grain production must ensure a per capita grain distribution of 800 jin of unprocessed grain.

Third, it must ensure the balance between the scale of various production sectors and the condition of the means of production and economic conditions to enable agricultural production to advance on the basis of continuously expanding the reproduction of natural and economic conditions.

Fourth, it must maintain a high level of collective and individual income and be able to enliven the rural economy and make the rural areas prosper. Based on computation according to the above structure of agriculture and animal husbandry, annual per capita income distribution will be around 130 yuan. It surely represents quite an increase when compared with present levels but it is still far from prosperity. There still has to be great development in commune and brigade-run industry and sideline occupations. Looking at present conditions, the development of commune and brigade-run industry is a necessary step to overcome the present difficult situation of large population and little arable land, to quickly improve the situation of the 800 million agricultural population and feed them and to swiftly make the rural economy prosper. From now on, the relative weight of commune and brigade-run industry must gradually be raised above 50 percent of total rural industrial output. We must achieve rural industrialization and effect a fundamental change in the situation of our rural areas.

Based on computation according to the above projection, the rational agricultural production structure in our country should consist of a ratio of 67:33 between crop-raising and animal husbandry. That is, crop-raising should constitute two-thirds of agriculture and animal husbandry one-third. Those proposals which blindly apply foreign statistics and contend that the production value of animal husbandry in our country should constitute more than one half of the total are impossible and unnecessary in our country at least for a considerable period of time to come. Forest land must constitute 30 percent of total land area and the production value of commune and brigades-run industry must constitute more than 50 percent of rural industrial output. The precondition for realizing this agricultural production structure is that actual per capita grain distribution reaches 800 jin.

Concluding from the above discussion, three possibilities can be foreseen in future movement and change of the agricultural production structure: First, per capita grain distribution remains below 500 to 550 jin; the agricultural production structure turns for the worse; grain production continously squeezes out the diversified economy and the 800 million rural population cannot find sufficient food. Second, per capita grain distribution increases to between 500 to 550 jin and 800 jin; the diversified economy is gradually developed; the entire agricultural production structure increasingly turns for the better but is still imperfect. Third, actual per capita grain distribution surpasses 800 jin; the agricultural production structure is rationalized; the diversified economy enjoys all-round development and the whole agricultural production realizes reproduction in a healthy

cycle. Computing according to this standard and under the condition that population remains constant, we still need to increase grain production by 150 billion jin each year.

What are the prospects for grain production and supply in our country in the near future? With the readjustment of the agricultural production structure, first, some land which is unsuitable for grain production but suitable for forestry, animal husbandry, fishery and economic crop-raising will be reconverted into diversified economic production. Second, in the past few years, in order to increase grain production, we have disregarded the feasibility of economic and natural conditions in blindly raising the multiple crop index and squeezing out area for green manure crop cultivation, fallow land and leguminous plant cultivation, resulting in a drop in soil fertility, proliferation of weeds, spread of pests and destruction of the agricultural ecology. This must be rectified and the multiple crop index in grain production must be reduced. By doing thus, although the cultivation area of grain will go down, it will not only be good for developing the diversified economy, but will also be very necessary for the development of grain production itself. In 1979, part of the irrational cultivation plan in the whole country was readjusted. Some overly high multiple crop indices were reduced and the grain cultivation area was reduced by 32 million mu. However, because per unit area output was raised, the total grain yield still increased by more than 40 billion jin during that year and forestry, animal husbandry, oil-bearing crops and other industrial crops also increased production. This shows that as long as there is rational arrangement, it is possible to develop a diversified economy by cutting down the grain cultivation area, on condition that the per unit area output is continuously increased. Of course, we must also take note that if management is bad, by summary and swift reduction of grain cultivation area in some areas (particularly high-yield grain producing areas) during a given period, the already accute grain problem might be further aggravated and further damage might be done to the diversified economy of other areas.

How much we can reduce the grain cultivation area to convert it to diversified production really depends on the growth rate of total grain output. On the whole, the sum of the amount of grain production reduction due to reduction of the cultivated area and the amount of grain needed to feed the population increase in a year must be essentially equal to the amount of grain production increase in that year. This should be the ceiling for cuts in the cultivated area in any 1 year and this limit must not be exceeded. The readjustment of the agricultural production structure must not be done in a rush. It is unrealistic to hope to use a few years to totally readjust our present irrational agricultural production structure. We must be prepared to work for 10 years, 20 years or even longer to accomplish this task. We must be enthusiastic about developing a diversified economy. Apart from using all land and areas which are possible and suitable for diversified production to develop the diversified economy, we must particularly do concrete work and increase total grain output in a step-by-step manner. We can divide the task of readjusting the entire agricultural production structure into two parts: First, we must change the present situation whereby cotton, oil and grain depend on importation. According to statistics in the Nantong-Yancheng areas, if we can solve the problem of 1 billion jin of grain, from 1985 onward, we can increase cotton production by 4 million dan each year. Meaning, 2.5 jin of grain can get 1 jin of cotton, whereas grain and cotton prices in the international market stand

at a ratio of 1:15. Thus we can see that the expansion of cotton fields in these areas can reap great economic benefits. Second, we must gradually realize the transformation from an irrational to a rational agricultural production structure. The first part can be completed in a relatively short time, while the last part will take longer.

At present, to make up for the serious effects caused by the extremely irrational agricultural production structure which was brought about by longstanding one-sided emphasis on grain production, we must vigorously propagandize the importance of forestry, animal husbandry, sideline occupations, fishery and industrial crops and take concrete steps to change this irrational structure. However, we must not move from one type of one-sidedness to another type and neglect grain production. Grain is an important question which bears on the whole of agriculture and the whole national economy. We must take a prudent and scientific attitude toward this question. Under the condition of balance between demand and supply of grain, we must gradually readjust the internal disequilibrium in agriculture in a planned manner. As the 30 March circular of the CCP Central Committee and the State Council said: "In undertaking this task, our orientation must be clearcut and our pace must be steady. We must take into consideration all related elements, repeatedly analyze, make use of favorable conditions and avoid unfavorable ones, make prudent decisions and advance steadily. We must never neglect grain production and must expand diversified production. This is our policy."

(Article received in January 1981 and edited in April)

CSO: 4007/568

BRIEFS

MECHANICAL SEED SELECTION--Beijing, 1 Sep (XINHUA)--China's seed companies have taken active measures to popularize machine selection of fine seeds of various crops with good results. The total amount of fine seeds selected by machines for planting reached some 1.2 billion jin last year, 10 times of that selected in 1978 and 2 times of that selected in 1979. The Ministry of Agriculture, which imported seed-selecting machines from abroad in 1976, asked farm machinery institutes and plants to design, develop and produce similar machines to meet our own needs and started popularizing these machines in 1978. At present some 5,000 seed-selecting machines are used to select seeds of wheat, rice, maize, rape, cotton and other crops in various provinces, municipalities and autonomous regions, including Liaoning, Ningxia, Jiangsu, Beijing, Shanghai, Tianjin and Heilongjiang. [Beijing XINHUA Domestic Service in Chinese 0102 GMT 1 Sep 81 OW]

CSO: 4007/572

BRIEFS

PROCUREMENT OF SUMMER GRAIN, OILSEEDS--As of 20 July, some 1.59 billion jin of summer grain were delivered to state granaries in Anhui, overfulfilling the state quota by 6 percent, or 310 million jin over that of the same period of the record year of 1979. Following the fulfillment of delivery of rapeseeds in late June, local peasants continued to sell their surplus rapeseeds to the state. By July 20, some 940 million jin had entered granaries. This amount may be converted into more than 300 million jin of oil, which is a little more than 100 million jin over and above the entire amount of oil (including rapeseed, peasant and sesame oil) procured in 1980. Convinced that the party's rural policies will remain unchanged, some peasants even sold their old grain and accumulated oil this year. A number of peasant households sold in one single season 10,000 jin of wheat and 1,000 jin of oil each. [Beijing RENMIN RIBAO in Chinese 28 Jul 8] p 1]

ANHUI PREFECTURE GRAIN PURCHASES--Suxian Prefecture, Anhui, last year purchased 680 million jin of grain, including above-quota purchases, and stored 1.1 billion jin of grain in granaries. This year, its state purchase and above-quota purchases of summer grain amounted to 290 million jin, and as of 5 August had stored 399 million jin of grain in granaries. It is expected that 1 billion jin of autumn grain and 150 million jin of oil-bearing crops will be stored this year. [OW011603 Hefei Anhui Provincial Service in Mandarin 1100 GMT 25 Aug 81]

RICE HARVEST--Shucheng County, Anhui, has reaped a good early rice harvest from more than 443,000 mu of rice fields. As of 2 September, the county had procured 40.88 million jin of rice, overfulfilling early rice procurement tasks by 2.2 percent. [OW071251 Hefei Anhui Provincial Service in Mandarin 1100 GMT 5 Sep 81]

CSO: 4007/569

BRIEFS

JIANYANG COUNTY SUMMER GRAIN--Jianyang County, Fujian, fulfilled its annual summer grain procurement plan on 22 August, 1 month ahead of time, by storing more than 76 million jin in granaries. [OW031551 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 2 Sep 81 OW]

FUJIAN RICE BLAST--Some 37,000 mu of late rice crops in Shaowu County, Fujian, are exposed to blast of rice. Efforts are being made to control the disease. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 1 Sep 81 OW]

LIANCHENG COUNTY RICE--Liancheng County, Fujian, this year produced 3 million jin more early rice than in 1980. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 1 Sep 81 OW]

LONGXI PREFECTURE GRAIN--As of 17 August, Longxi Prefecture in Fujian Province had overfulfilled the annual summer grain procurement quota. More than 430 million jin of grain had already been delivered to the state granary. By the same date, some 39 million jin of peanuts had been procured. This was 50 percent more than the preset quota. [Fuzhou FUJIAN RIBAO in Chinese 23 Aug 81 p 1 OW]

FUJIAN TANGERINES, TEA--Yongchun County, Fujian, is growing 38,000 mu of tangerines and 42,000 mu of tea. The total output value this year can reach 7.5 million yuan. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 1 Sep 81 OW]

FUJIAN PREFECTURE RICE CROPS--The 2.3 million of single-crop and double-crop late rice in Sanming prefecture, Fujian, is growing well. Rice blast, which seriously affected the prefecture's early rice crop, has been basically arrested after all rice blast-afflicted straws in 600,000 mu of the early rice fields were properly disposed of. [OW011603 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 27 Aug 81]

CSO: 4007/563

BRIEFS

GRAIN, OIL PROCUREMENT--Beginning from this year, Guangdong Province institutes full responsibility systems in grain and oil purchase and sales, with quotas to be unchanged for 3 years. This is a reform in the system of grain and oil management in the province. The implementation of this system is beneficial to the stabilizing of the peasants' burdens so that the production teams, under the guidance of the state plans, can take such measures as are suitable to local conditions to readjust the arrangement of agricultural production and to promote the all-round development of grain and industrial crops. After the increase in the prices of grain and oil procurement above the quota, the peasants throughout the province can earn an additional 42 million yuan or so from grain procurement above the quota and an additional 10 million yuan or so from edible oil procurement above the quota with free supplies of 100,000 tons of chemical fertilizers by way of reward. [HK180705 Guangzhou Guangdong Provincial Service in Mandarin 2330 GMT 14 Jul 81]

SPRING TEA OUTPUT UP--Spring tea output in Guangdong this year reached 79,200 dan, a 8 percent increase over the same period of last year. Since last winter, 42,500 mu of tea plantation have been established on reclaimed land in Guangdong. [Hong Kong ZHONGGUO XINWEN in Chinese 13 Jul 81 p 10]

CSO: 4007/564

BRIEFS

GUIZHOU AUTONOMOUS PREFECTURE IMPROVEMENTS--Since liberation, particularly since Qiandongnan Miao-dong Autonomous Prefecture was established in July 1956, the autonomous prefecture has built water-drawing channels and other water conservancy projects, totaling 34,292 projects; with some 1.3098 million mu of irrigated farmland, 46.8 percent of the total area of its arable land, which accounts for 4.8 times of the amount arable land there was in the initial period of liberation. The autonomous prefecture has also actively carried out diversification. The autonomous prefecture's total grain output last year reached 1.7591 billion jin, 51.5 percent more than in 1955. The autonomous prefecture now has 22.31 million mu of forests, 48.7 percent of its total area. Over the past 31 years, the autonomous prefecture has supplied some 10.13 million cubic meters of timber to the state. It has set up 713 local factories, mines and enterprises, including coal mines, electricity plants, machinery plants, chemical works, leather factories, paper mills, foodstuff factories, textile mills, construction material plants, radio plants, and so on, which have manufactured some 60 kinds of main industrial products. Its total industrial output value last year was 116.12 million yuan, 35 times greater than in 1949. The length of its roads has increased from 5.04 km before liberation to 4,450 km now, with 3,018 motor vehicles of various kinds. It has built channels, totaling 1,275 km. [HK180720 Guiyang Guizhou Provincial Service in Mandarin 2315 GMT 19 Jul 81]

CSO: 4007/572

ZUNHUA COUNTY BENEFITS FROM AGRICULTURAL STRUCTURE REFORM

Shijizhuang HEBEI RIBAO in Chinese 23 Jul 81 p 1

[Article by correspondent: "Developing Agriculture Depends on Policy and Science; Zunhua Utilizes Achievements of Zoning To Reform the Agricultural Structure; a New Situation Has Emerged in the Development of Agricultural Production of the Entire County"]

[Text] Zunhua County, conscientiously implementing the spirit of the Third Plenum, has criticized the leftist mistakes and utilized the achievements in agricultural zoning in time, and suited measures to local circumstances to reform the agricultural structure. A good new situation of overall development has emerged in agricultural production throughout the county. A comparison of 1980 and 1979 shows that the total yield of food grains increased 14.5 percent, the total yield of cotton increased 60.7 percent, and the total yield of peanuts increased 55.4 percent. The total yield and the unit yield of chestnuts, corn and paddy rice all reached the highest levels in history. At the same time, forestry, livestock production and diversification also developed on a relatively large scale.

Zunhua County is a test county of agricultural zoning and agricultural resources survey in our province. For over 2 years, with the help of concerned departments, an overall survey of the 1,520 square kilometers of land of the entire county was conducted. The results of the survey showed that 40 percent of the land in the county is suitable for developing food grain production and economic crops, 37.6 percent is suitable for developing forestry, and over 4 percent is suitable for developing livestock production. But for a long time, because of the influence of leftist mistakes, all mountain land, hilly regions and plains had to take food grains as the key link, and regardless of the temperature, light conditions, or water resources, all had to plant more wheat. Thus forestry, livestock production, sideline production and diversification were seriously damaged. After the party Third Plenum, this county conscientiously purged the "leftist" mistakes, and on the basis of the resources survey, developed agricultural zoning and readjusted the internal structure of agriculture.

In forestry, superiority of producing chestnuts in the mountainous land in the north was firmly grasped. Now, 300,000 new chestnut trees have been planted, there are 500 mu of seedbeds, and at the same time, 7 plots of superior

varieties and 15 densely planted gardens have been established and 400,000 trees of superior varieties have been grafted. Last year, a year of severe drought, the total yield of chestnuts reached 9.8 million jin, an increase of 3.8 million jin over 1979. In the southern mountain regions, hawthorn fruit was produced, and plans called for increasing the original area of more than 7,000 mu to 20,000 mu. In 1980, 1,681 mu of hawthorn plants were newly planted. At the same time, new forestation in the mountain regions covered 25,400 mu, mulberry trees covered 1,135 mu, and 590,000 dry fruit trees were planted. To develop the superiority of grassland resources, cattle and sheep and family raising of livestock in small numbers were developed in a big way, with the prerequisite that the number of hogs raised be stabilized. Up to the end of April of this year, the entire county raised 249,000 head, remaining in a stable state. The number of sheep raised was 49,800 head, an increase of 26.4 percent over 1979. During the first half of this year, 900,000 chickens were hatched. Over 1,000 families raised over 50 chickens each. The number of cattle, ducks, geese, and rabbits also increased by a large amount. In the resource survey, over 10,000 mu of water surface was found that can be used to develop fish culture. As of 1980, 7,000 mu have already been utilized, commune brigades have developed 178 locations for raising fish, and up to 50 families are raising fish. The development of diversification has also provided a source of raw materials for the big development of commune and brigade enterprises. Up to the present, there are over 4,100 commune and brigade enterprises throughout the county and the annual income is 24.1 million yuan.

In food grain production, in accordance with the new agricultural zoning plan, suiting measures to local circumstances was insisted upon, and the individual superiority of the zones was developed. The planting area of wheat was gradually readjusted from the original 490,000 mu to 340,000 mu in 1980, from double cropping a year of flat sowing to companion planting of two croppings a year, triple cropping in 2 years of flat sowing and companion planting. Although the planting area of wheat was reduced by over 100,000 mu, the unit yield and total yield all increased greatly. Since 1980, the county has firmly undertaken the production of corn according to the local conditions of sunshine, water, heat, soil and the planting experience of the masses. The sowing area reached 450,000 mu and the total yield reached 314 million jin, an increase of 40.81 percent over 1979. Paddy rice was mainly planted in the region west of Xiliucun and south of Pingancheng Commune in the water-rich belt and surrounding reservoirs; the area increased from 42,000 mu in 1979 to over 60,000 mu in 1980; the total yield reached 56.3 million jin, an increase of 80 percent over 1979, achieving the highest level in history. This year the area was expanded again, to 75,000 mu.

At present, Zunhua County is further readjusting the internal structure of agriculture in accordance with the agricultural zoning plans of the state agricultural commission and the province, and in the spirit of the general soil survey conference, it is drawing up county level comprehensive agricultural zoning to strive for greater development in agriculture, forestry, livestock production, fishery and diversification within a relatively short period.

9296
CSO: 4007/554

BUMPER WHEAT CROP REPORTED IN DINGXIAN DESPITE DROUGHT

Shijiazhuang HEBEI RIBAO in Chinese 25 Jul 81 p 1

[Article by Xuan Tieshuan [6513 6993 2165], Hui Junsheng [1920 0193 3932], and Chen Huiying [7115 1920 5391]: "Production Responsibility System Shows Its Power in Year of Severe Drought; Total Wheat Production in Dingxian Surpasses Highest Level in History"]

[Text] This year the Dingxian County committee of the Chinese Communist Party and the county revolutionary committee conscientiously implemented various forms of the joint production responsibility system in calculating compensation for wheat production, mobilizing the production enthusiasm of the broad masses of commune members; the 780,000 mu planted with wheat throughout the county produced a bumper harvest that broke the record in this year of drought. The average yield per mu was 340 jin, an increase of 130 jin over last year and an increase of 26 jin over the previous highest record realized in 1979. The total yield reached 270 million jin, an increase of 100 million jin over last year and an increase of 20 million jin over 1979. The entire county overfulfilled the summer food grain procurement task, the food grain ration of the commune members increased onefold over last year, the price of food grains in the farmers market has dropped steadily, and the economy is prospering.

Dingxian is a large county with 870,000 people and over 1.26 million mu of cultivated land. Each year the sowing area of wheat constitutes over 90 percent of the total area of cultivated land planted with food grains. To realize this year's bumper harvest of wheat, the county committee and the county revolutionary committee grasped the implementation of the joint production responsibility system in calculating compensation for wheat production as the central link to realize bumper harvests of wheat after the summer harvest last year, and summarized and popularized the experience in this system by the seven production teams of the Taerwa Brigade of Huazhangmeng Commune in this county. Over 4,800 production teams of the whole county were placed under unified planning, planting and irrigation, and over 2,200 teams implemented the responsibility system in calculating compensation for joint production and in contracting cadres in a big way; the remaining teams also implemented field management and the responsibility system in contracting work according to quotas, and the production enthusiasm of the broad masses of commune members was mobilized. The county committee and the county revolutionary committee

paid special attention to grasping the work of the backward teams and of Dacunzheng; last year before wheat planting, over 200 cadres were transferred from the agencies directly subordinate to the county and were placed under the leadership of responsible comrades to go to Dacunzheng and the poor teams to work at the localities and to help implement the party's policy, to implement the various forms of the responsibility system; in only half a year's time these localities underwent great changes, and increased yields of wheat were promoted throughout the entire province.

9296
CSO: 4007/554

WHEAT HARVEST IN HANDAN PREFECTURE INCREASED DESPITE DROUGHT

Shijiazhuang HEBEI RIBAO in Chinese 22 Jul 81 p 1

[Article by Xing Ziwen [5887 1311 2429] and Li Tianzeng [2621 1131 1973]: "Policies Since the Third Plenum Show Strong Power; Handan Prefecture Wins Out Over Severe Drought, Total Yield of Wheat Increases 10 Percent"]

[Text] Handan Prefecture was won out over severe drought: the total yield of 5.12 million mu of wheat reached more than 1.2 billion jin, a 10-percent increase over last year, while the area of planting was reduced by over 300,000 mu. The yields in Daming, Feixiang, Linzhang, and Weixian all increased over 20 percent. The entire prefecture completed the summer food grain procurement task set by the province with a 13-percent surplus.

Since the party Third Plenum, the number of production teams that have implemented the joint production responsibility system in calculating compensation in this prefecture increased from 5 percent of the total number of production teams last year to 57.3 percent, thus mobilizing the enthusiasm of the farmers. The quality of sowing wheat, management, harvesting and threshing, and farm work was better than in past years. In many commune brigades, commune member families invested in fertilizers for the fields they were responsible for. Many commune members in Daming County voluntarily collected funds to build electric power facilities, sink wells, buy machinery, buy chemical fertilizers, and to make up for the problems of low productivity and collective poverty caused by "large-scale, formalism, egalitarianism." This year, wheat production shows an increase of nearly 40 percent over last year. Handan Prefecture has suffered from drought year after year; this year's spring drought was especially severe: the cumulative rainfall from the sowing of wheat to harvesting was only 34.1 millimeters. The cadres and commune members of the entire prefecture actively resisted drought, dug for potential underground water, and exerted efforts to expand the area of irrigation of wheat. Since the beginning of this year, the entire prefecture has drawn a cumulative amount of 1.2 billion cubic meters of water from underground, an increase of nearly onefold over the same period last year, and over 800,000 mu of wheat fields were irrigated. Linzhang County, which relied on canal irrigation in the past, undertook construction of mechanized wells and motor pump management in a big way; the gain of drainage and irrigation machinery was fully developed; over 400,000 mu of wheat was irrigated for wintering, returning green, jointing and filling in time; and the total yield of wheat surpassed that of last year by over 20

percent. Feixiang County sank 45 superior deep wells in the 6 communes in Gushui Prefecture in the eastern part of the county, where the area of cultivated land constitutes half that of the entire county, so that wheat that formerly "had to rely on the weather" was irrigated, an increased yield of 4 million jin in summer was realized, and the production of wheat of the entire county showed an increase of nearly 30 percent over last year.

9296
CSO: 4007/554

BRIEFS

MORE FAMILIES RAISING CHICKENS--Chicken raising by city residents and families of suburban commune members in Harbin, Jiamusi, Quiqihar and Hegang municipalities of Heilongjiang has virtually become a specialized and socialized operation. In 1980, the number of families raising chickens for commercial purpose reached 13,700; altogether they raised 910,000 chickens and turned over or sold to the state 11.68 million jin of fresh eggs, accounting for more than 70 percent of all the fresh eggs procured by the state locally. Currently the number of this type of families has grown to 19,100 and they are expected to raise 1.3 million chickens by the end of 1981. [Hong Kong ZHONGGUO XINWEN in Chinese 15 Jul 81 p 3]

CSO: 4007/564

BRIEFS

JIANGSU NEW PESTICIDE--The Nanjing pharmaceutical plant in Jiangsu has succeeded in developing a new pesticide, (er li ben mi qi zhi), a compound of dichlorobenzene which is harmless to both human and livestock. Trail use has proved this pesticide to be very effecient in killing mosquitoes, flies and cockroaches and in eliminating and controlling insect pests harmful to rice, cotton, wheat, vegetables, fruit trees, tea, tobacco and many other kinds of plants. [OW301331 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 28 Aug 81]

CSO: 4007/572

BRIEFS

COTTON PRODUCTION--A good cotton crop is being gathered in from 100,000 mu of cotton fields in Duchang County, Jiangxi. As of 27 August, more than 10 million jin of unginned cotton had been gathered in. It is estimated that the county's total ginned cotton output will be 10 percent more this year than the last year. [OW071251 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 5 Sep 81]

JIANGXI COUNTY GRAIN--After delivering 13.73 million jin of public grain and 43.70 million jin of surplus grain, Yiyang County, Jiangxi Province, sold 7.57 million jin of above-quota grain to the state as of 21 August. Despite a decrease in acreage for early rice crops this year, the county increased total output of early rice by 6.4 percent compared with last year. [OW011603 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 26 Aug 81]

JIANGXI COUNTY RICE PRODUCTION--Xingguo County, Jiangxi, has reaped a good harvest of early rice this year with its total output reaching 22 million jin, 15.8-percent increase over that of last year. [OW011603 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 29 Aug 81]

JIANGXI PREFECTURE RICE PRODUCTION--Fuzhou prefecture, Jiangxi, has reaped a bumper harvest of early rice this year with its total output increasing by 6.3 percent over 1980 and by 17.68 million jin over 1979. [OW011603 Nanching Jiangxi Provincial Service in Mandarin 1100 GMT 29 Aug 81]

CSO: 4007/563

BRIEFS

FORESTRY CONFERENCE--The Nei Monggol Daxinganling forest work conference concluded on 1 September in Hohhot after an 11-day session. Attending the closing ceremony were Kong Fei, secretary of the regional CCP Committee, Kui Bi, Zhou Beifeng, Ba-tu-ba-gen and Wang Zaitian. Kong Fei made a report. He said: for a long time, Daxinganling has paid more attention to logging than to afforestation. This has led to a serious imbalance between logging and cultivation. Therefore, it is necessary to plant trees on all barren hills and land. We should also hasten the comprehensive use of forest resources and a diversified economy. Earnest efforts should be made to implement the forestry act, effectively protect the forests, strictly forbid illegal tree cutting and prevent forest fires. [SK022230 Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 1 Sep 81]

CSO: 4007/572

BRIEFS

SUMMER HARVEST IN GUONGDONG--By 13 July, nearly 10 million mu of early rice were harvested in Guangdong. On Hainan Island, where summer harvest was already completed, the output of early rice this year was more than 100 million jin higher than in the same period of 1980. The province as a whole is expected to produce less early rice this year because of poor weather conditions and because its total early rice area was reduced to a little more than 28 million mu this year. [Hong Kong ZHONGGUO XINWEN in Chinese 15 Jul 81 p 1]

CSO: 4007/564

BRIEFS

SHANDONG DROUGHT--The Weifang Prefecture, Shandong Province, CCP Committee and the prefectural administrative office jointly held a broadcasting rally on the morning of 8 September, mobilizing rural areas to combat drought, preserve soil moisture and begin sowing 7.5 million mu of winter wheat. Since the beginning of this year, the prefecture has been hit by a drought which is the worst and the longest in the past 50 years. The drought continues. It is seriously endangering late autumn crops and wheat sowing. [SK091025 Jinan Shandong Provincial Service in Mandarin 2330 GMT 8 Sep 81]

HIGHER COTTON OUTPUT EXPECTED--This year Shandong has planted 13 million mu of cotton, 1 million mu more than in 1956, the year in which the cotton area was the largest in the history of this major cotton producing area of China. As of today, over 80 percent of the cotton plants in this province is rated first or second grade, and this is 2 million mu more than in 1980, thanks to the timely rainfall last June. Shandong is expecting a better cotton harvest than in last year if there is no natural disaster between now and harvest. [Hong Kong ZHONGGUO XINWEN in Chinese 14 Jul 81 p 3]

CSO: 4007/564

BRIEFS

ZHEJIANG CITY EARLY RICE--Wenzhou City, Zhejiang, purchased 81.43 million jin of early rice by 23 August, overfulfilling purchase quota by 1.8 percent. The amount was 2.8 million jin higher than that purchased for the same period last year. [OW011603 Hangzhou Zhejiang Provincial Service in 1040 GMT 27 Aug 81]

ZHEJIANG COUNTY CATTLE--As of now, Jinhua County, Zhejiang Province, has raised more than 1,500 head of dairy cattle. [OW011603 Hangzhou Zhejiang Provincial Service in Mandarin 1040 GMT 26 Aug 81]

ZHEJIANG COUNTY AUTUMN CROPS--Commune members in Ruian County, Zhejiang, have been organized to strengthen field management of the county's more than 480,000 mu of autumn crops. Additional fertilizer has been applied to 343,000 mu of late rice and 105,000 mu of sweet potatoes. [OW011603 Hangzhou Zhejiang Provincial Service in Mandarin 1040 GMT 28 Aug 81]

CSO: 4007/563

TABLE OF CONTENTS OF 'ZHONGGUO SHOUYI ZAZHI' NO 6, 1981

Beijing ZHONGGUO SHOUYI ZAZHI [CHINESE JOURNAL OF VETERINARY MEDICINE] in Chinese No 6, 1981 inside front cover

[Text] Main Contents

Incidence of Leukosis in Dairy Cattle of Nanjing District .....Dong Shiping [5516 1102 1627], Nanjing Public Health and Epidemiology Station; et al. (2)

Clinical Observation of Chronic Leukosis in Dairy Cattle .....Yu Chang (5)

The Discovery of Stephanurus dentatus in the Wild Boar .....Institute of Veterinary Science, Guangxi Province (9)

Diagnosis and Treatment of Septicaemic Streptococcosis in Piglets.....Gan Menghou, et al. (10)

Clinical Diagnosis of Traumatic Reticulitis in Dairy Cattle .....Xiao Dinghan [5135 1353 3352], Animal Husbandry Subfarm, Nanjiao Farm, Beijing (16)

Diagnosis and Treatment of Rumen Atony in Farm Cattle..... Nie Rongfu (18)

Intestinal Intussusception in Sheep.....Lu Shengrong (21)

Prevention and Treatment of Oedema Diseases in Chicks..... Cao Guangrong [2580 0342 2837] and Li Xinquan [2621 2450 3123], both of the Northwest Agricultural College (22)

Clinical Signs and Treatment of Listeriosis in Swine..... Wang Changsheng (24)

Avian Leucocytozoonis: A Review.....Huang Yinyao [7806 0603 1031] and Huang Luyi [7806 8692 3746], both of the Department of Veterinary Medicine, Fujian Agricultural College (40)

9717
CSO: 4007/532

TABLE OF CONTENTS OF 'NONGYE JIXIE' NO 7, 1981

Beijing NONGYE JIXIE [FARM MACHINERY] in Chinese No 7, 1981 p 40

[Text] Standards of Technical Grades for Tractor Driver and Combine Driver..... (2)

Recent Developments in Farm Machinery..... (4)

Relation between Farm Mechanization and Job Responsibility System..... (7)

Renewal of Various Springs in Diesel Engine..... (8)

New Products..... (9)

Small and Portable Axial-flow Pump..... (12)

Field for Newcomers..... (17)

The Early Damage and Its Prevention of the Reduction Gear on the First Shaft of the Dongfanghong-28 Tractor..... Zhang Deshan [1728 1795 1472], Sales Division, Changchun Tractor Plant (18)

New Sources of Energy:

Dual-fuel (Diesel-Marsh Gas) Engine.....Yang Renfa [2799 0088 4099], Shanghai Internal Combustion Engine Research Institute (19)

Which Mechanical Irrigation System Saves Energy the Most? ..... (21)

Add to Your Knowledge:

A Few Words about Colors for Farm Machinery.....Liang Zian [2733 1311 1344], Hunan University (23)

On Maintenance..... (32)

On Repairing and Manufacturing..... (34)

Advertisement--Model ZQM Axial Ball-piston Hydraulic Motor by Jinshan County Farm Machinery Repairing and Manufacturing Plant, Shanghai..... (39)

9717
CSO: 4007/537

TAN QILONG REPORTS ON FLOOD INVESTIGATION

HK191344 Hong Kong HSIN WAN PAO in Chinese 19 Aug 81 p 5

[Zhongguo Xinwen She Dispatch: "The Qilong Points Out After Investigation That the Destruction of Forests on the Upper Reaches of Chiangjiang River was the Principal Cause of the Big Flood in Sichuan"]

[Text] Chengdu, 19 August--In a recent investigation of the disastrous flood in Chongqing municipality, Sichuan Provincial CCP Committee First Secretary Tan Qilong pointed out. Sichuan Province was hit by a catastrophic flood this year.

Looking into its cause this flood affected such an extensive area and wrought such heavy losses chiefly because the forests on the upper reaches of the Chiangjiang River were destroyed. As a result of serious soil erosion, torrents of water rushed down the mountains after a heavy downpour with a force that could not be stopped.

He said: "In order to prevent future floods, the most essential thing to do is to protect the forests and prevent the wanton felling of trees. In the mountainous areas, we must energetically carry out afforestation, revert cultivated fields back to forests in a planned and systematic way, gradually readjust the agricultural structure and maintain the ecological balance. With the bitter lesson that we have learned from this disaster, we must educate the people not to do any more foolish things like "bringing ruin to posterity while benefiting from our predecessors."

According to investigations by departments concerned, out of a total of 193 counties in Sichuan Province, only 12 have a forest cover exceeding 30 percent. Of the 53 counties in Central Sichuan, nearly half have forest covers of less than 3 percent.

Some have even less than 1 percent. With the destruction of forests, soil erosion becomes more and more serious and the silt content of various rivers increases year after year. Due to the destruction of vegetation, the water conservation capacity weakens and the river flow gradually reduces, thus making the place more vulnerable to drought and flood.

CSO: 4007/561

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TITLE: "Studies on Disease Resistance in Rice Breeding. II. A Preliminary Report on the Identification of Spectrum of Blast Resistance of Rice Varieties and Hybrid Lines"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 3, 1981 pp 1-9

TEXT OF ENGLISH ABSTRACT: Spectra of blast resistance to 15 pathogenic strains of 13 physiological races representing 7 different groups (A, B, C, ..., G) were identified for 21 blast-resistant rice varieties and 22 hybrid lines in 1980. Among the ken varieties, Toride No 1 and No 2 (the main genotype of resistance is Pi-Z^t) and some of their hybrid lines had the broadest spectra of resistance, covering all the pathogenic strains tested, and had higher percentages of R-type reaction within their spectra. Pi 5 (with Pi-ta^2 gene) and some of its hybrid lines and two sien varieties, Tetep and Tadukan, also had broader spectra of resistance. Among the BL group of varieties (with Pi-b gene), BL 7 and BL 2 exhibited better blast resistance than did the others. Most of the above-mentioned

[Continuation of ZHONGGUO NONGYE KEXUE No 3, 1981 pp 1-9]

varieties were resistant to both blast and bacterial leaf blight.

Among the hybrid lines, Zhongxi 7602-5, 7604, 7702, 7709 and 7850 not only had broad spectra of blast resistance, but also had promising agronomic characteristics. It is suggested that they be introduced to commercial production or as parents in rice breeding programs.

Most varieties and hybrid lines are resistant to some pathogenic strains and susceptible to others, but their spectra of resistance are different. Therefore, it is of practical value that a newly released blast-resistant variety be provided with its spectrum of resistance, especially its resistance to local prevailing physiological races.

It was found that the correlation between the broadness of spectrum and the strength of blast resistance was highly significant, that is, the broader the spectrum the stronger the resistance and the higher the percentage of R-type reaction within the spectrum (R+M). Moreover, the unanimity of resistance to blast among rice varieties and hybrid lines was mainly in the case of an R-type reaction. Therefore, in the breeding program for blast resistance the unanimity of quantitative and qualitative effects of resistance should be emphasized. The breeder should pay more attention to R-type reactions in the breeding material.

[Continuation of ZHONGGUO NONGYE KEXUE No 3, 1981 pp 1-9]

Using two strains of bacterial leaf blight for inoculation it was found that strain L2-2 had a stronger virulence than did strain OS-118, and varieties Shizu, Tetep and Toride No 2 were superior in resistance to bacterial leaf blight. The correlation between virulence of the two strains was highly significant, while only negligible negative correlations between the spectrum of blast resistance and the virulence of either of the two bacterial strains have been observed.

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TITLE: "Studies on Inheritance of Blast Resistance in Rice Varieties"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 3, 1981 pp 10-15

TEXT OF ENGLISH ABSTRACT: A set of resistant varieties to rice blast showed high resistance to fungus strains ZD_1 and PG_1. Another set of high yielding varieties was susceptible or moderately susceptible to the fungus strains mentioned above, except Jingyu 1 and Jingxi 17, both having resistance to fungus strain PG_1.

The F_2 population crossed by resistant varieties and high yielding ones showed different resistance to fungus strains ZD_1 and PG_1 according to their parent resistability. For ZD_1, F_2 populations of crosses with donors of Pi 1, Toride 1 and BL3 segregated into 15:1. This showed that there were two dominant genes for resistance in these donors. For PG_1, a ratio of 3:1 was obtained in the same material. This indicated that there is one dominant gene controlling resistance to PG_1. The F_2 population of crosses involving the donor Minehikari segregated into 3:1. This showed one dominant gene for ZD_1. The F_2 population crossed

[Continuation of ZHONGGUO NONGYE KEXUE No 3, 1981 pp 10-15]

between the resistant variety Nan 65 and middle-late Jingyue 1 segregated into 15:1 for two fungus strains. The F_2 population crossed between Nan 65 and middle-early varieties Jingfeng 2 and Jingxi 17 segregated into 63:1 for the same fungus strains. These results might be caused by the additive effect of multiple genes.

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TITLE: "Investigation of the Genetic Regulation of Earliness in Wheat Based Upon the Correlation of Characteristics and Heritability"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 3, 1981 pp 16-24

TEXT OF ENGLISH ABSTRACT: This investigation was conducted in conjunction with the wheat breeding work during 1978-1980. Preliminary studies have been made on the genetic regulation of earliness.

1. According to data collected in three years, the average correlation coefficient between the F_1 and their parents was 0.7859** ($P < 0.01$), and that between F_2 and their parents was 0.8772** ($P < 0.01$). The regression coefficient was also highly significant. This shows that F_1 can be predicted from the maturity of the mean value for the heading date of the parents. In addition, the corresponding range of maturity of F_2 can also be directly predicted from the parents.

2. The mean value of heritability (h_b%) in a broad sense, according to the calculated data from 20 different crosses of F_2 and 8 crosses of F_3 in 3 years, was 62.37 and 60.87 percent respectively, both showing relatively high values. The heritability between F_2 and F_3 was moderately stable. It is advisable to begin the

[Continuation of ZHONGGUO NONGYE KEXUE No 3, 1981 pp 16-24]

selection of early generations according to the characteristics of the heading stage.
3. Two factors affecting the estimation of the value for the heritability of the heading date in wheat are: a) the genetic stability of the parents; b) the difference of the parental ecotypes and the heading dates.
4. When crosses were made among the parental materials with different growing periods, a mean value of the heading date earlier than that of the parents and a negative superiority were generally found in F_1, while in F_2 the heading date showed a continuous variation controlled by polygenes and a tendency toward early parents and transgressive segregation. Hence most early varieties may be selected from the early parents as well as from late parents. With the intensification of the selection pressure, the early-maturing materials with both high yield and desired characteristics can be obtained.
5. By crossing the local early-maturing cultivars with the foreign ones which are insensitive to day-length and temperature in order to accumulate the early-maturing genes, we have found a method of breeding and selection of the extremely early-maturing wheat cultivars.

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TITLE: "Preliminary Studies of the Relationship between Bleeding Sap and Aerial Organs of Winter Wheat"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 3, 1981 pp 33-38

TEXT OF ENGLISH ABSTRACT: The ear size has a closely positive correlation to the sugar content of bleeding sap in winter wheat, but has little correlation to the amino acid content of bleeding sap. Thus the sugar content in the bleeding sap may be used as an index for measuring the developmental status of ears. Under single planting conditions, as the ear number per single plant increased, the number of secondary roots per culm and the content of amino acids in the bleeding sap decreased while the sugar content increased. Under the conditions of population cultivation, as the ear number per single plant increased the number of secondary roots of every culm decreased, and the amounts of bleeding sap did not change significantly while the sugar content in the bleeding sap increased.

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TITLE: "Ecological Classification of the Chinese Soybean Cultivars"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 3, 1981 pp 39-46

TEXT OF ENGLISH ABSTRACT: In the present study the main ecological characteristics (growth period, days from seedling emergence to flowering, pod setting period) which influence the regional adaptation were used as the basis for the ecological classification of the Chinese soybean cultivars.

The representative cultivars of all types of different seeding seasons were classified into 12 maturity types and 44 ecological groups, and 80 of the representative cultivars were labeled with latitude of regions of origination as well as their types of seeding season. According to this classification, maturity groups and characteristics of photoperiodic response of the soybean cultivars of different regions from northern to southern China and the differences among cultivars can generally be understood. Such classification is also valuable for understanding the rule of ecological distribution of the ecological groups and as guidance for varietal introduction, arrangement of cultivation region and ecological breeding of soybeans.

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TITLE: "Enhancement of Cotton Maturity by Ethrel Spray"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 3, 1981 pp 47-53

TEXT OF ENGLISH ABSTRACT: Delay in boll maturity is often a serious problem affecting the cotton production in China. In 1974-1980, we used ethrel spray on cotton for enhancement of maturity in the laboratory as well as in the field. Ethrel-treated plants possess higher levels of ethylene than do the controls, which in turn induces rapid boll formation with a higher intake of photosynthates. The bolls of the treated plants also dehisce earlier and their peroxidase activity is higher, particularly in the wall.

By spraying with ethrel solution of 500-1000 ppm when most of the bolls have reached 70-80 percent maturity, cotton plants not only mature earlier, but also give higher yield and better fiber quality.

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TITLE: "Studies on the Microsporocarp and Leaf Cavity of Azolla imbricata Nakai by Electron Microscopy"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 3, 1981 pp 54-56

TEXT OF ENGLISH ABSTRACT: The fine structure of microsporocarp and leaf cavity in Azolla was investigated with the aid of scanning and transmission electron microscopes. The microsporangia, massulae and spores inside the microsporocarp were photographed for surface features and size measurement. In addition, the surface structure of the dorsal lobe and the stomatal characteristics were investigated. The mode of distribution of the blue-green algae and the multicellular hairs in the leaf cavity were scanned. The morphology of the young algae on the stem tip was compared with that of the mature algae inside the leaf cavity.

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TITLE: "The Agroclimatic Resources and Heat Condition for Cropping System in China"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 3, 1981 pp 57-65

TEXT OF ENGLISH ABSTRACT: The time and space distributions and their rules of light, heat and water resources in China and the agroclimatic conditions required for staple crops are analyzed in detail, and accumulated temperature indexes of the different varieties of staple crops are obtained. Because the heat condition is a major climatic factor in the development and yield of the crops and the numbers of the multiple crop index in a region also depend on the degree of heat, we consider $\geq 0^{\circ}C$ accumulated temperature as the principle index, the disaster weather as a supplementary index, and the numbers of continuous cropping as the multiple crop index. According to the indexes mentioned above, China can be

[Continuation of ZHONGGUO NONGYE KEXUE No 3, 1981 pp 57-65]

divided into 3 regions (1 crop a year, 2 crops a year and 3 crops a year) and 13 subregions. The favorable and unfavorable conditions in every region are described. There have been many disputes regarding the problems of double cropping of rice and an additional cropping of wheat in southern Jiangsu and double cropping of rice in Sichuan, and for this reason we present some views on this question.

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TITLE: "The Improvement of Cultivation System for Increasing Photosynthetic Efficiency in Sugarcane Region"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 3, 1931 pp 66-69

TEXT OF ENGLISH ABSTRACT: This paper discusses how to increase the photosynthetic efficiency of sugarcane and other rotating, interplanting or undersowing crops with sugarcane. We have undertaken research on three aspects of this problem in the main sugarcane growing region of Xianyou County, Fujian Province.
1. Turning the directly-sown cane seed piece into a nursed shoot for transplanting, a method used since 1973. The yield of the millable cane stalk is increased 10-30 percent, meaning that the photosynthetic efficiency is increased 0.0990 - 0.3795 percent over the direct sown, excluding the wheat production efficiency.
2. The test of shifting from single wheat to interplanting wheat with vegetables at a 1 meter width interval, as begun in 1974. Due to the harvesting date of vegetables being more than one month earlier than that of wheat, the planting of

[Continuation of ZHONGGUO NONGYE KEXUE No 3, 1981 pp 66-69]

sugarcane and its interplant crop soybeans may also be done early. As a result, the yield of sugarcane increased 14-29 percent over the direct sown cane seed piece under the wheat plant. Even though the planting area of wheat has decreased 50 percent, its production has decreased only 25 percent and this loss can be supplemented by the production of soybeans. In addition, about 15,000 kg of vegetables per hectare will be obtained, i.e., the photosynthetic efficiency is increased 0.3780-0.5027 percent.

3. Changing from a fallow field following the harvest of sugarcane to that planted with a winter crop. Formerly, after harvesting ratoon cane the field usually lay fallow until April of the next year when rice seedlings were transplanted. Through experimentation we have planted such winter crops as wheat, barley and green manure on this field, beginning in 1975, and have been successful. The yield of wheat is 2625 kg and the fresh weight of green manure per hectare is 30,000 kg; i.e., the photosynthetic efficiency of this field increased over 0.145 percent.

Now these measures have become an integrated system and are to be popularized widely in the main sugarcane region of Xianyou County, Fujian Province.

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TITLE: "A Discussion on Microclimatic Resources for Development of Citrus Production"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 3, 1981 pp 70-73

TEXT OF ENGLISH ABSTRACT: Due to the differences of the relief in Hunan Province, there exist some microclimate regions allowing citrus trees to overwinter easily. It is usually shown that citrus trees in these regions can pass through the winter safely, but those grown outside these regions are severely attacked by cold and freezing temperatures. According to microclimatic principles, a model of the warm microclimate regions has been developed. A new pattern of citrus production will come into being with the advantages of microclimate regions are fully used.

9717
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TITLE: "Preliminary Observation of the Growth and Development Principle of Summer Millet"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 6, Jun 81 pp 2-3

ABSTRACT: For the purpose of investigating the principle of growth and development of summer millet in order to increase its yield still further, a 3-year experiment was carried out at the Shanxi University of Agriculture Experimental Farm in 1978-80. The test breed was Fujincao, the soil fertility was medium, the powdery sandy loam contained 1 percent organic matter, the topsoil was thick, the harvest of the previous wheat crop was 25 Jun at a yield of 548 jin/mu. The summer millet was planted on 1 Jul and was ripe at the beginning of Oct. Observations of the growth of the root system of the summer millet during the various stages of the development period, the principle of material transfer during the various stages, the growth condition of the above ground portion during the various stages, etc. are reported. The paper concludes that soil banking should be early and hoeing should be light in order not to weaken the function of the roots. As 90 percent of the dry material of the spikes is the photosynthesis product of leaves after heading, late stage management is essential to prevent lodging and early withering and to extend the period of effective function of the green leaves.

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TITLE: "Parental Characteristics of Gaoliang, Genealogical Origin, and Breeding Characteristic Mating Principle"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 6, Jun 81 pp 4-7

ABSTRACT: In the past 2 decades, while breeding new 3 lines of gaoliang using sexual hybridization technique, a project of studying the characters of parents, the genealogical origin, and breeding characteristics as simultaneous principle for mating was carried out. Consequently, the 3 new lines of Xinliang No 7, Xinliang No 52, Xinliang No 80, the restorer line of Xinliang No 202 and the sterile line of 02A were bred out. All these lines are now extensively extended all over the country, while their hybrids, Jinza No 6, Jinza No 7, Jinza No 9, and Yuanza No 10 are now being extended nationally over 9,000,000 mu. Based upon the data gathered to date, this paper analyzes the relationship between the characteristics of the parents and the heterosis of the F_1, the relationship between the genealogical origin of the gaoliang and the heterosis of the F_1, the relationship of the breeding characteristic of parents and the breeding characteristic of the hybrid offspring, and the technique of group-mating on the basis of parental characteristics, genealogical origin, and breeding characteristics.

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TITLE: "Research on Hereditary Parameters of Major Characteristics of F_2 of Interbreed Hybridization of Ultra-early Ripening Breeds of Upland Cotton"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 6, Jun 81 pp 8-12

ABSTRACT: Ultra-early ripening breeds of upland cotton are used as the experimental materials to study the inheritability, variation coefficient, genetic progress, coefficient of interrelationship, and such selection indices as the major yield characteristics for the purpose of improving the breeding method, raising the selection efficiency, and accelerating the breeding process. Ultra-early breeds of Chacyang No 1, 6901, Heishanmian, 7364, 711-1 are used as parents. In order to achieve genetic purity, the parents are continuously inbred for 3 generations. In 1977, several mating groups are chosen for hybridization to produce F_1 in 1978. The same grouping system is continued for further hybridization. In 1979, the P_1, P_2, F_1, F_2 are planted simultaneously and sequentially. During the period of growth and development, 20 plants are randomly taken from each of the materials for inspection. Field inspections and laboratory examinations of these produce 13 characteristic expressions. Inheritability, environmental variables, variation coefficient, genetic progression, and gene type interrelation coefficient are calculated for these expressions to produce a formula for determining the selection indices.

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TITLE: "Yield Increase Result of Pulverized Coal Ash Reconstituted Soil and Research on Its Pollution Effects"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 6, Jun 81 pp 13-15

ABSTRACT: Pulverized coal ash is the waste residue of thermal power plants using coal as the fuel. According to incomplete statistics, more than 1,000,000 tons of it are discharged every year in Shanxi Province. A large piece of land is used to store it and the dust is harmful to the people and industries. The authors began to study ways of treating and utilizing it. There are 2 types of clay and sandy soils in the 5 brigades south of Taiyuan. Small plots of 0.05 mu each of these brigades were picked for experimentation. In the sandy soil, 2,500, 5,000, 10,000 and 20,000 jin/mu; in the clay soil 10,000,20,000,30,000, and 40,000 jin/mu of the ash were added and wheat, corn, rice, cotton, etc. were planted. For each type of soil, 5 controls were also arranged. Soil specimens were periodically taken for analysis and the crops were observed during all stages of growth and development. The increase of benzo (a) pyrene and cadmium contents in the crops is 0.01-0.2 ppb, still considerably less than the 1.0 ppb contamination limit of some countries, while the increases of yield of the various crops varies from 10.1 to 30 percent.

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TITLE: "Experiment on Decomposition of Upland Green Manure and Water Consumption"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 6, Jun 81 pp 16-17

ABSTRACT: At present, the technique of turning over green manure is rarely adopted for upland fields because sometimes it has been found to consume excessive water. As the rainfall distribution is not even, the effect of the green manure cannot be stable. The rainfall of the upland winter wheat region of the province is often more than 400mm/year while the yield is only about 100 jin. Normally to produce 100 jin of wheat requires about 120mm of rainfall; therefore, it is necessary to study the water needs of green manure to decompose in order to select the variety requiring less water. Water consumption, decomposition speed, and nitrogen accumulation of Phaseolus mungo, Seshania carmabina, black beans, sesame, and Crotalaria juncea were studied. For the nitrogen accumulation per unit of water consumption, black bean is a more ideal green manure for dry land. The yield increase of crops is most obvious with Seshania carmabina as the green manure, but it consumes a great deal of water and, therefore, is not suitable.

6168
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TITLE: "A Preliminary Study on Aphid Parasites in the Cotton Field (Hymenoptera: Aphidiidae)"

SOURCE: Beijing KUNCHONG ZHISHI [ENTOMOLOGICAL KNOWLEDGE] in Chinese No 4, 1981 pp 158-160

ABSTRACT: In cotton fields of Jiangsu Province, aphids are mainly Aphis gossypii Glover, with several additional minor species in grain and cotton intercropped fields. From these aphids, 4 types of parasitic wasps were discovered: Lysiphlebia japonica (Ashmead), Trioxys indicus Subba Rao et Sharma, Aphidius avenae Haliday, and Lipolexis gracilis Forster, with a rate of parasitism of 10-15 percent in the early and as high as 60-70 percent in the late stage of the growth development period of the cotton. These parasites are observed to be one of the important natural enemies, but 2 problems remain with respect to their application for the control of cotton aphids: (1) The growth of parasites is obviously slower than the aphids; (2) Secondary parasites form the important factor controlling the multiplication of aphid parasites. The problem of secondary parasites should be emphasized in future studies.

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TITLE: "Attraction and Elusion of Branch Bundles of Walnut and Flatspine Prickly-ash to Heliothis armigera (Hubner)"

SOURCE: Beijing KUNCHONG ZHISHI [ENTOMOLOGICAL KNOWLEDGE] in Chinese No 4, 1981 pp 162-163

ABSTRACT: In 1978, during the occurrence of the fourth generation of cotton boll worms (Heliothis armigera (Hubner), branch bundles of walnut, poplar, pricklyash, white pepper, etc. were compared for the effectiveness in either attracting or driving away cotton boll worm moths. Results demonstrate that walnut branch bundles attract the largest number of moths, while those of pricklyash attract none at all. Even after thorns were removed from the pricklyash branches, not a single moth was found on these bundles. Experimental data are included in the paper.

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TITLE: "Application of Optimum Control Theory in Pest Management"

SOURCE: Beijing KUNCHONG ZHISHI [ENTOMOLOGICAL KNOWLEDGE] in Chinese No 4, 1981 pp 180-182

ABSTRACT: Most recently, in foreign countries, pest management has begun to be distinguished from pest control. The objective of pest control is to reduce the number of pests, the fewer the better. With pest management, the goal is to control the density of pests and stabilize it to within a certain economic threshold. In pest management, pests and agricultural crops form an ecological system. The pests, their natural enemies, and the crops interact with meteorological, soil, and other environmental conditions. These interrelationships and principles of change must be understood and the density of pests in the fields must be constantly determined so that insecticides and natural enemies may be properly used to bring about the goal of pest management. In 1973, Shoemaker utilized the optimum control theory to carry out a study of the management system of 2 types of corn pests and arrived at the optimal strategy of using breeds of corn borer resistance but applying agricultural drugs to control root worms. The technique of Shoemaker of using a management model to determine the optimal method of management in a given environment is explained.

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TITLE: "Comments on the Problem of Air Hole in Subterranean Termites (Termitidae: Macrotermitinae)"

SOURCE: Beijing KUNCHONG ZHISHI [ENTOMOLOGICAL KNOWLEDGE] in Chinese No 4, 1981 pp 191-192

ABSTRACT: Since 1974, a great deal has been said about air hole of subterranean termite nests, but descriptions of these air holes and opinions concerning them are very different. This paper proposes the following questions: (1) What is the relationship of the location of the air hole and the major nest, the tunnel, etc.? (2) How is the air hole distinguished from the channel through which termites fetch food? (3) How to distinguish air hole from tunnels of other insects? (4) Whether air hole does exist above the main nest, and when can it be discovered? (5) Is the expansion of the air hole permanent or temporary? Varied opinions concerning these and other aspects of the air hole are briefly discussed.

6248
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TITLE: "A Comparative Study on the Effect of LRH-A on the Serum Gonadotropin Levels of Female Carps in Spawning Season"

SOURCE: Shanghai SHUICHAN XUEBAO [JOURNAL OF FISHERIES OF CHINA] in Chinese No 2, 1981 pp 103-109

TEXT OF ENGLISH ABSTRACT: Based on species discrepancies of responsiveness to LRH-A, serum gonadotropin (sGTH) levels of the mature female carps and immature female silver carps were compared after cardiac injections of LRH-A at two different times in one day. Fish sera were sampled at intervals either within 1 hour or during a 24-hour period. The sGTH concentration was measured by radioimmunoassay. In all cases dealing with the mature fish held under 18-20°C, two distinct peaks were observed, one within 5 minutes and the other 5-6 hours later. The second peak was not detectable in the immature fish. This may signify that the second surge of GTH was more important than the first in inducing spawning. When

[Continuation of SHUICHAN XUEBAO No 2, 1981 pp 103-109]

the carp was subjected to lower temperatures (11-13.5°C), the occurrence of the peaks was much delayed, which is in accordance with the fact that when the water temperature drops below the optimum, the response to the analogue is prolonged or even suppressed as has been found in farm practice.

When silver carps received LRH-A 23 days after the first ovulation, induced by the same hormone analogue, the sGTH pattern was similar, but higher in magnitude. Anatomical examination showed that the ovaries had significantly proceeded to the fourth stage of maturation, though the GSI values were lower than those prior to the first ovulation. The long-term effect of LRH-A in terms of acceleration of ovarian recrudescence in the postspawning phase of the reproductive cycle was apparent.

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TITLE: "Histological Observations of the Maturity of the Female Gonad of the Small Croaker, Pseudosciaena polyactis Bleeker"*

SOURCE: Shanghai SHUICHAN XUEBAO [JOURNAL OF FISHERIES OF CHINA] in Chinese No 2, 1981 pp 161-169

TEXT OF ENGLISH ABSTRACT: The present paper deals with observations of the cycle of histological changes in the ovaries of the small yellow croaker, Pseudosciaena polyactis Bleeker. Samples were collected monthly from Bohai and the northern part of Huanghai in May, 1963, to June, 1964.

1) Maturity. Based on the macro- and microscopic characteristics, the maturation of the ovaries can be divided into six stages: Stage I--Juveniles; Stage II--includes immature ovaries and recovered spent ovaries; Stage III--ripening ovaries; Stage IV--nearly ripe ovaries; Stage V--ripe ovaries near spawning or spawning; Stage VI--spent ovaries, and Stage VI-IV', V'--recovered ovaries.

2) Annual cycle of the ovaries. The ovaries enter into Stage VI-II' in July-August; Stage II' in September-October; Stage III in November-January (mostly in December-January) (this is the overwinter period); Stage IV in March-May (often in April); Stage V from mid-May to mid-June (mostly in May) (This is the spawning period). After the fish releases one batch of ova, the ovary is in Stage VI-IV' (or IV'), and later on develops to Stage V'. Stage VI occurs in June.

[Continuation of SHUICHAN XUEBAO No 2, 1981 pp 161-169]

3) Reproductive cycle. Sections of ovaries of each successive group (2^{+}-15^{+}) collected during the spawning season showed empty follicles. This indicates that the reproductive cycle of the small yellow croaker is of the plural cyclic type, with the adult fish spawning every year.

4) Type of spawning. The ripe eggs of this fish are released in at least two batches in a breeding season. It is evident that sections of ovaries sampled from fish before and after spawning all show oocytes of various sizes.

* Contribution No 496 from the Institute of Oceanology, Chinese Academy of Sciences.

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TITLE: "A Preliminary Study on Hypnean"

SOURCE: Shanghai SHUICHAN XUEBAO [JOURNAL OF FISHERIES OF CHINA] in Chinese No 2, 1981 pp 179-185

TEXT OF ENGLISH ABSTRACT: 1. For the preparation of hypnean from Hypnea sp. prior to extraction the algae should be treated with Baume' 20° NaOH at room temperature for 2 days, and rinsed with water. The treated seaweed is then extracted with 15-20 times its quantity of 0.04 percent dilute H_2SO_4 solution at 100°C for 1-1.5 hours. After filtration, KCl was added to the filtrate to bring its concentration to 0.2 - 0.3 percent, and the solution was allowed to gelatinate. The gelatin was frozen, thawed and dried.
2. The gelatinous strength of hynean was markedly affected by electrolytes. The

[Continuation of SHUICHAN XUEBAO No 2, 1981 pp 179-185]

order of effect by cations is: $Ca^{++} > K^+$, Cs^+, $Rb^+ > Na^+$, Li^+, NH_4^+; and by anions is: $Cl^- > NO_3^-$, $SO_4^- > I^- > CO_3^-$.
3. The setting point of hynean was affected by KCl, increasing with the increased concentration of KCl.
4. The culturing effects of bacteria (Salmonella typhasa, Pasteurella pestis, Shigella dysenteriae and Brusella abortus) in hynean media and in agar media were compared. Hynean gave better results.

9717
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TITLE: "On the Screening of Resistant Rice Cultivars (Pyricularia oryzae) in Guangxi"

SOURCE: Tianjin ZHIWU BINGLI XUEBAO [ACTA PHYTOPATHOLOGICA SINICA] in Chinese No 2, Jun 81 pp 1-5

TEXT OF ENGLISH ABSTRACT: During 1973 to 1979, 11,198 rice cultivars were tested in Guangxi rice blast nurseries for their resistance. Some resistant cultivars were further tested by artificial inoculations. As a result, 23 of them showed highly to moderately stable resistant reactions. Hong-jiao-zhan, Chai-tang and Jin-wei-ai were cultivars with a broad spectrum of resistance to blast. Preliminary observations revealed that reactions to leaf and neck blast were correlated.

In this paper, the problem of the type of disease resistance to rice blast is discussed. The so-called horizontal resistance described by van der Plank (1968) was not demonstrated in the present study.

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TITLE: "Factors Affecting Infection of Some Winter Wheat Cultivars to Scab Disease Caused by Fusarium graminearum Schw."

SOURCE: Tianjin ZHIWU BINGLI XUEBAO [ACTA PHYTOPATHOLOGICA SINICA] in Chinese No 2, Jun 81 pp 7-12

TEXT OF ENGLISH ABSTRACT: Greenhouse inoculation experiments made by inoculating separate florets at the end of the blooming period to florets with (1) anthers exposed to the outside of the glume, (2) anthers remaining inside the glumes and (3) with anthers removed, with inoculation made by introducing a drop of spore suspension to the upper part of the ovary. Incidence of the infection from these three groups of tests were in the ratio of 15:58:31 respectively for (1):(2):(3), for a susceptible cultivar Zhe-mai No 1; and 4:18:13 respectively for the resistant cultivar Su-mai No 3. It was noted that the test of inoculating exposed anthers gave the lowest infection rate whereas that of inoculating anthers remaining within the glumes gave the highest rate of infection, particularly in the case of the susceptible cultivar. It may be considered that the low proportion of residual

[Continuation of ZHIWU BINGLI XUEBAO No 2, Jun 81 pp 7-12]

anthers of the entire spike is an indication of a low primary infection. The resistant cultivar, Su-mai No 3, however, revealed a delay in expression of symptoms and a diminution of the infection area.

Inoculation tests performed indoors and in the field at varying stages of maturity of the common winter wheat plant have demonstrated that a resistant cultivar has a shorter period of susceptibility to infection, has a marked increase in resistance to infection at the milky stage and a delay in the period of full disease development in the case of field plants inoculated at the blooming stage.

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TITLE: "Effects of Wheat Rosette Disease Virus on Laodelphax striatella Fallen"

SOURCE: Tianjin ZHIWU BINGLI XUEBAO [ACTA PHYTOPATHOLOGICA SINICA] in Chinese No 2, Jun 81 pp 13-18

TEXT OF ENGLISH ABSTRACT: It has been shown that wheat rosette disease virus (northern cereal mosaic virus) is harmful to the vector Laodelphax striatella Fallen. The nymphal stage of the vector was prolonged for 5.3 days. The death rate before emergence of the viruliferous adult increased by more than one time over that of the non-viruliferous adult. 3.3 percent of the viruliferous individuals cannot emerge normally. The pre-oviposit stage of the female adult was prolonged 1.4 - 3.5 days. The oviposit stage and longevity were shortened by 8.2 - 11 days and 6.5 - 15.4 days respectively. The average amount of the oviposition decreased by 1.9 eggs a day. The total amount of oviposition per female adult fell to 95.4 - 107.7 eggs. But the virus does not influence the filial generation.

The ability of the viruliferous vector to resist low temperatures obviously declined. When these insect vectors were treated at 0°C to -4°C for a long time and

[Continuation of ZHIWU BINGLI XUEBAO No 2, Jun 81 pp 13-18]

at -16°C to -19°C, and -21°C to -24°C for three hours, the death rate of the viruliferous vectors was 25-35 percent higher than that of the non-viruliferous vectors. The viruliferous vector is sensitive to moisture. Under RH at 50 percent for 24 hours, its death rate was 10 percent higher than that of the non-viruliferous vectors. When they were starved for five days, the death rate of the viruliferous nymphs was 20 percent higher than that of the non-viruliferous nymphs in spring and 25 percent higher in summer. The ability of the male to resist starvation is weaker than that of the female.

9717
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TITLE: "A General Survey on Seasonal Migrations of Nilaparvata lugens (Stål) and Sogatella furcifera (Horvath) (Homoptera: Delphacidae) by means of Airplane Collections"

SOURCE: Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 2, Jun 81 pp 73-82

EXCERPTS FROM ENGLISH ABSTRACT: The brown planthopper (BPH), Nilaparvata lugens (Stål), and the white-backed planthopper (WPH), Sogatella furcifera (Horvath), are serious insect pests infesting China's rice crop. During 1977-1979, airplane collections of both BPH and WPH from central China (Hubei, Hunan, Jiangxi and Anhui) were made in the summer and fall by using a specially designed trap attached to the bottom of an airplane. For the purpose of regular collections, we flew a total of about 13,000 km. Nine species of planthoppers were collected. The total number of planthoppers collected was 2102, including 946 BPH, 969 WPH and 187 other planthoppers.

These migratory planthoppers usually flew in swarms. The heights of migrations of these planthoppers were from 1500 to 2000 m in the summer and 500 to 1000 m in the fall. It has been estimated that in the summer the highest aerial density of the

[Continuation of ZHIWU BAOHU XUEBAO No 2, Jun 81 pp 73-82]

BPH was 4.80/1000 m^3, and that of the WPH was 4.27/1000 m^3. In the fall the highest aerial density of the BPH was 3.89/1000 m^3 and that of the WPH was 1.40/1000 m^3. In Hubei, earlier infestations caused by these planthoppers in rice fields usually coincided with higher aerial densities of these migratory planthoppers. Present studies have also proved that mass migrations of these planthoppers depended largely on winds. Their northward migration was mainly enforced by the southwestern wind in the summer, and their southward migration, or back home migration, was enforced by the northeastern wind in the fall. There is evidence to show that summer migrations of these planthoppers may start in south China, with spreading continuing until they reach north China.

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TITLE: "Preliminary Studies on Screening of Varietal Resistance to the Rice Gall Midge (Orseolia oryzae Wood-Mason)"

SOURCE: Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 2, Jun 81 pp 91-94

TEXT OF ENGLISH ABSTRACT: The varieties from the "International Rice Gall Midge Nursery" and local varieties were screened for the resistance to the gall midge in 1978-1979. The mass screening procedure included the seedbox, seed bed and field tests. Initial varietal screening was conducted in the seedling stage, and those varieties showing low infestation were retested in the field to confirm their resistance. Each test was performed in the cage. The gravid females were released to the plant at the rate of one insect per 20-25 seedlings, when the seedlings had grown about 7-10 days after sowing (2-3 leaves), or about 10 days after transplanting.

No gall appeared in varieties of W_{1263}, R_{7-2757}, R_{7-2758}, R_{7-2760}, $R_{35-2750}$, $R_{35-2751}$, $R_{35-2752}$, $R_{35-2753}$, $R_{35-2755}$, $BKNBR_{1030-76-2}$, $BKNBR_{1030-3-3-6}$, RD_9,

[Continuation of ZHIWU BAOHU XUEBAO No 2, Jun 81 pp 91-94]

ARC_{6650}. Highly resistant varieties (1-5 percent of plants with galls) include IET_{6013}, IET_{6014}, $R_{35-7739}$, BG_{404-1}, $BKN_{6806-46-60}$, $BKN_{6809-74-17-1}$, $BKNBR_{1030-11-2}$, $BKNBR_{1030-51-1}$, $BKNBR_{1094-28-1}$, $BKNBR_{1030-7-5-4}$, $BKNBR_{1030-78-2}$.

Among local varieties, no gall appeared in Gi-Chai-Zhen, and 16 varieties, including Da-Vor-Zhan and Wuan-Jin-Feng 6, are highly resistant (1-15 percent plants with galls). However, as plant anatomy indicated, the growing point of these varieties was already damaged by the gall midge. The varieties showing resistance may be used as resistant parents.

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TITLE: "A Preliminary Study of the Spider Population in the Paddy Field Ecosystem"

SOURCE: Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 2, Jun 81 pp 101-110

TEXT OF ENGLISH ABSTRACT: 1. The species of spiders in the paddy fields in the northern and middle mountainous and plain areas of Guangxi have been investigated systematically from 1977-1978. Twenty-eight species of the spiders were found. The dominant species among them are Theridion octomaculatum (Theridiidae), Engonidium graminicolum and Oedothorax insecticeps (Micryphantidae), Lycosa pseudoannulata and Pirata subpiraticus (Lycosidae) and Tetragnatha japonica (Tetragnathidae).
2. The results of systematic investigation from the early to late periods of the rice field ecosystem show that the main spider populations are Engonidium graminicolum and Oedothorax insecticeps in the early and middle stage of early rice, but in the late stage is Theridion octomaculatum. There are Micryphantidae and Theridion octomaculatum populations in equivalent quantities in the early stage of late rice, but the former is greatly surpassed by the latter at the end of the late rice. Under the condition of nonapplication of insecticides in the full growing stage of

[Continuation of ZHIWU BAOHU XUEBAO No 2, Jun 81 pp 101-110]

the rice plant, the maximum number of the mixed population of spiders can reach 40~50 million per mu, with an average of 30~40 million by the end of the early rice. At the end of the late rice it can amount to 20 million, with an average of 15~18 million.
3. The main things that influence the spider's population are the usage of a great deal of chemical insecticides over a long period and the seasonal agricultural practices.
4. The spiders in the paddy field might regulate the density of leafhoppers and planthoppers. In the integrated control of rice insect pests the spiders in the paddy field should be protected and utilized against insect pests.

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TITLE: "Studies on Rice Dwarf Virus Disease. II. Infection, Disease Development and Control"

SOURCE: Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 2, Jun 81 pp 127-135

TEXT OF ENGLISH ABSTRACT: The incubation period of the rice dwarf virus in plants ranges from 10-15 days varying with temperatures, rice growth stages and the instars and sex of the insect vector Nephottetix cincticeps. The most susceptible stages of rice are from the first tillering to full tillering stage. Infection at these stages results in no panicle or grain, while at the end of the tillering stage it results in yield losses of about 80 percent of the rice. The virus overwinters in the insect vector. It is transmitted to the first crop of rice by the viruliferous adult insects of the overwintering generation, and to the second rice crop by the viruliferous insects of the second and third generations. The transovarial virus in the first and fourth generations of congenital viruliferous insects can

[Continuation of ZHIWU BAOHU XUEBAO No 2, Jun 81 pp 127-135]

cause a second infection in early and late rice respectively. The disease is usually much more severe on the earlier transplanted late rice, especially on the late hybrid rice. The infection occurs mainly at the initial period after transplanting.

The disease can be effectively controlled by adopting the integrated control measures on the basis of cultural practices and timely elimination of the vectors. In the disease-prone areas, the effective control of the disease can be attained by the application of insecticide one to three times at the initial period of the earlier transplanted late rice for elimination of the insect vectors based on crops with the same growth duration being planted in adjacent fields.

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No. 165

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CHINA REPORT

AGRICULTURE

No. 165

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

NATIONAL

Reports on New Developments in State Farms
(ZHONGGUO NONGKEN, 24 Jun 81) 1

Agricultural Reclamation Achievement Statistics
Success of Sichuan Joint Venture

Responsibility System Measures for State Farms
(CHINA DAILY, 16 Sep 81) 9

Briefs
Shelled Peanut Export 10
Prosperous Counties 10

ANHUI

Briefs
Luan Prefecture Rice 11
Huaiyuan County Farm Machinery 11
Chuxian Grain Production 11

BEIJING

Contracts Signed Between Scientific, Farming Units
(BEIJING RIBAO, 20 Jul 81) 12

FUJIAN

Briefs
Rules for Communes 14
Xianyou County Sugar Output 14

CONTRACTS SIGNED BETWEEN SCIENTIFIC, FARMING UNITS

Beijing BEIJING RIBAO in Chinese 20 Jul 81 p 1

[Article: "Scientific Research Units, Production Units Cooperate To Popularize Agricultura Techniques"]

[Text] As of June, Beijing City's agricultural science and technology units had already implemented and were negotiating with the production units a total of 250 technical service contracts. These contracts include comprehensive jobs and individual jobs. They include demonstration of application of research achievements and also experimental research for production units. They include assistance in technical training and also services to provide for consultation, the testing of samples, and the making of specimens.

The signing of technical service contracts in the city began on a trial basis last year; 12 contracts were signed, and good results were achieved. Changping County's Forestry Bureau signed a fruit tree technical service contract with the Baxianzhuang Brigade for the scientific trimming, thinning, insect control, and spraying of phosphorus on the leaves of over 5,000 pear trees. The yield of pears increased from 320,000 jin the previous year to 640,000 jin, the percentage of good fruit increased from the 20 to 30 percent of the past to 98 percent, and net income increased 70,000 yuan over the previous year. The Crop Institute of the city's Agricultural Sciences Academy signed a contract with the Caihe Brigade of Changping County to provide services for 200 mu of paddy rice; these included thinning the sowing area and making the seedlings healthy, transplanting shallowly and irrigating intermittently. Unit yields increased threefold, and each mu conserved over 80 jin of chemical fertilizer. At the same time, because of triple-cropping companion planting of wheat, corn, and sweet potatoes over 30 mu of arid fields, and because 10 side plots that had been left fallow and scattered were utilized to test-plant large amounts of sweet potatoes, the total yield of food grains for the entire brigade increased 410,000 jin over the previous year. Signing technical service contracts not only brings economic gain to the production units, but also promotes the development of scientific technology. The Livestock Production Research Institute of the city's Agricultural Sciences Academy used the existing facilities of the hog farm of the supply and marketing cooperative of Changping County and the Jiulan chicken farm to separately carry out heterosis of lean meat hogs as well as studies and experiments in the forced moulting of chickens and extending the egg-laying period. With close

GANSU

Briefs

Minqin County Reservoir 15
Forestry Conference 15
Huan County Animal Husbandry 15

HEBEI

Responsibility System, Scientific Techniques Boost Yields
(HEBEI RIBAO, 10 Jul 81) 16

HEILONGJIANG

Briefs

Wheat Harvest 18
Beet Harvest 18
Livestock Breeding 18
Beet Harvest 18

HENAN

Statistics on Purchase, Sale of Food Grains
(YUNNAN RIBAO, 7 Jul 81) 19

JIANGSU

Nanjing Suburban Families Engage in Diversification
(Liu Ning; XINHUA RIBAO, 21 Jul 81) 21

Briefs

Xuzhou Autumn Sowing 23

JIANGXI

Briefs

Circular on Drought 24

LIAONING

Briefs

Paddy Rice Crop 25
Postflood Rehabilitation 25

NEI MONGGOL

Briefs

Cattle Breeding Committee 26
Grain Storage 26
Diversified Economy 26

SHAANXI

Achievements in Agricultural Science, Technology Outlined
(Gao Boping; SHAANXI RIBAO, 10 Jul 81) 27

Steps Taken To Combat Flooding in Hanzhong Prefecture
(SHAANXI RIBAO, 15 Jul 81) 30

Briefs
Harvesting Progress 31

SHANDONG

PLA Units Help Combat Drought, Harvest Bumper Wheat Crop
(DAZHONG RIBAO, 24 Jul 81) 32

SHANXI

Responsibility Systems for State Farms, Reclamation Enterprises
(SHANXI RIBAO, 5 Jul 81) 34

Deficit Turn Into Profits, by Yu Xizhi
'A Welcome Change'

ZHEJIANG

Briefs
Anji County Poultry 37

HONG KONG MEDIA ON CHINA

NATIONAL

Population, Industrial Growth Reported Reducing Arable Land
(Christopher Fleming; SOUTH CHINA MORNING POST, 8 Sep 81) .. 38

ABSTRACTS

AGRICULTURAL MACHINERY

NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY], No 2, 1981 42

AGRICULTURAL SCIENCE, TECHNOLOGY

NONGYE KEJU TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWS-LETTER] Nos. 3, 5, 1981 47

REPORTS ON NEW DEVELOPMENTS IN STATE FARMS

Agricultural Reclamation Achievement Statistics

Beijing ZHONGGUO NONGKEN [CHINESE AGRICULTURAL RECLAMATION] in Chinese No 6, 24 Jun 81 pp 2-4

[Article by the Planning Bureau of the Ministry of State Farms and Reclamation: "National Agricultural Reclamation Achievements in 1980"]

[Text] In 1980, the state farms and reclamation system conscientiously implemented the spirit of the Party's Third Plenum, followed the policies and guidelines established by the Party Central Committee to readjust enterprises, continued to improve business management, implemented the contracting work of finances, expanded the autonomy of enterprises, established a healthy production responsibility system, actively popularized new scientific research achievements, test-operated joint enterprises of agriculture, industry, and commerce, and gradually opened up the links between production, supply, and marketing. Greater achievements were realized in both production and construction.

State farms and reclamation enterprises overcame various difficulties and realized good harvests, despite severe damage by floods in the south and drought in the north of the nation. The total yield of food grains and soybeans, the per mu yield, the amount turned over to the higher authorities, the total production value, and profits--which are the five major indicators--all surpassed the highest levels in history. Overall increases were realized in the yield of food grains, cotton, oil, sugar, and tea. The total production value of industry and agriculture was 8.6 billion yuan, realizing a profit of 536 million yuan; the number of enterprises realizing a profit reached 60 percent.

I. State Farms and Reclamation Enterprises, Population and Workers

Over the past year, the state farms and reclamation system were adajusted and reorganized, and at the end of the year the number of various enterprises totaled 2,485. Of this number, there were 2,093 farms, 225 industrial enterprises exercising independent accounting, 40 building enterprises, 25 transportation enterprises, 79 commercial enterprises, and 23 others.

Among the 2,093 farms, 779 were under the jurisdiction of the province, the city, and the autonomous region; 330 were under the jurisdiction of the locality, the city, and the league; and 979 were under the jurisdiction of the county and the banner. The number of provincial farms increased by 20, the number of local farms decreased by 6, and the number of county farms increased by 30.

Of the nation's state farms and reclamation farms, those engaged in industry numbered 5,847, and those in the network of agricultural reclamation and commerce totaled 5,900.

The total population in agricultural reclamation throughout the nation increased by 252,000 persons over the previous year, reaching 11.36 million. Among them, 147,000 persons were born that year and 39,300 persons died. The net increase was 0-9 percent.

The number of workers in the state farms and reclamation system decreased by 64,100 persons from the previous year. At years end, there were 4,920,300 persons. There were another 343,700 persons in the labor force of the combined farms of communes and brigades. The total labor force of workers and commune and brigade laborers was some 5,264,100 persons--46.43 percent of the total population.

II. Agricultural, Forestry, Livestock, and Rubber Production

The state farms and reclamation system occupies a total area of 427 million mu of land. There are 66.82 million mu of cultivated land (2.39 million mu of cultivated land belonging to the commune and brigade collective). 176,83 million mu of grasslands, 9.07 million mu of water surface, and a total of 33.72 million mu in forest land, tea plantations, fruit farms, and rubber plantations.

The total production value of agriculture was 4.78 billion yuan. The area in food grains and soybeans covered 53.61 million mu; the total yield was 15.33 billion jin. The area covered in cotton was 2.45 million mu; the total yield was 1.86 million dan. The area of oil-bearing crops was 3.33 million mu; the total yield was 2.31 million dan. The area of sugar crops was 1 million mu; the total yield was 29.22 million dan. The area of tea covered 520,000 mu; the total yield was 321.000 dan. The area of fruit plants covered 1.14 million mu; the total yield was 5.28 million dan. The area of jinseng covered 3.78 million square meters; the total yield was 1.35 million jin.

The area of forest land was 31.69 million mu. Of this, the area forested that year was 1,087,000 mu, a 7.4-percent coverage.

Newly established rubber plants covered 289,600 mu, totaling 4.83 million mu. The total yield of dry rubber reached 103,000 tons.

The area planted for sisal hemp reached 210,000 mu; the total fiber yield was 11,900 tons.

The number of large livestock at year's end was 2.01 million head. The number of sheep at year's end was 6,995,000 head. The number of hogs at year's end was 3,987,000 head. The total yield of meat was 470 million jin. The total yield of milk was 650 million jin.

III. Industrial Production

There were 6,072 State farm and reclamation industries and enterprises, foodstuff industries numbered 1,611, building materials industries numbered 1,126, and machine industries numbered 1,085.

The total value of industrial production in 1980 reached 3.82 billion yuan, calculated in constant figures. This was an increase of 10.4 percent over the previous year.

Those industries contributing a relatively large proportion of production value by profession were as follows: the foodstuffs industry contributed 30.2 percent; the machinery industry contributed 17.5 percent; the textile industry contributed 13.1 percent; the chemical industry contributed 8.2 percent; the building materials industry contributed 7 percent; the petroleum industry contributed 5.8 percent; the paper manufacturing industry contributed 2.9 percent; and the coal industry contributed 2.1 percent.

In the main, state farm and reclamation industries produced 98 products, among them: 4,143,000 tons of raw coal, 498 million kilowatt-hours of electric power, 98,000 tons of chemical fertilizers, 490,000 tons of cement, 4.35 billion bricks and tiles, 352,000 tons of lime, 116 million meters of cotton cloth, 77,000 tons of machine-made paper, 153,000 tons of machine-processed sugar, 54,000 tons of white wine, 21,400 tons of dairy products, 43,600 tons of edible vegetable oils, 286,000 dan of finished tea, 8,338 tons of white coir rope, and 5.3 million pieces of medium and small farm tools. Production of raw coal, electric power, cement, bricks and tiles, cotton cloth, machine-refined sugar, dairy products, edible vegetable oils, finished tea, and medium and small farm tools all increased. Production of lime, chemical fertilizers, machine-manufactured paper, and white wine decreased. The quality of industrial products improved, and the varieties increased; some products were listed as superior quality products.

The industries and enterprises of the nation's state farm and reclamation system practicing independent accounting realized a profit of 130 million yuan.

IV. Building Industry, Transportation Industry, and Commerce

There were 40 engineering construction enterprises in the state farm and reclamation system that practiced independent accounting; they employed 41,300 workers. The major construction projects completed were: 394,400 square meters of housing and markets, 21 mechanized wells, and 1,161,800 cubic meters of earth and rocks. Total income was 82.07 million yuan. Twenty-four enterprises earned a profit, while 16 suffered a deficit. The balance between profit and loss showed a deficit of 100,000 yuan.

There were 25 transportation enterprises and 37 transportation companies in the state farm and reclamation system that practiced independent accounting. They owned 2,116 trucks, 69 buses, and 35 barges, and they transported 1.46 million tons of merchandise. Shipments totaled 336 million ton-kilometers. Passenger transport numbered 457,000 person-times. Passenger travel was 31,83 million person-kilometers. Total income was 74.11 million yuan. Except for the deficits

of the state farms and reclamation systems in Xizang and Qinghai, the others all realized a profit, with the balance between profit and loss showing a profit of 7.09 million yuan.

The network of state farms and reclamation and commercial enterprises numbered 5,900, with 47,200 workers. It completed total retail sales of social commercial products worth 1.429 billion yuan, and realized a profit of 50.45 million yuan.

V. Agricultural Products Handed Over for Sale and Export

In 1980, the total amount of agricultural products handed over by the nation's state farms and reclamation system was worth 4.22 billion yuan. A total of 6.1 billion jin of food grains and soybeans were handed over for sale. The commercial commodities percentage was 39.9. The amount of meats handed over for sale totaled 274 million jin.

The state farm and reclamation system exported over 200 types of products worth a total of 450 million yuan in Renminbi. The major export products were 156,000 tons of soybeans, 27,000 tons of rice, 440,000 head of live hogs, 18,000 head of live cattle, 138,000 dan of tea, 34,000 jin of pilose antlers, 77,000 jin of jinseng, and 916 tons of hops. Among the export products, agricultural and animal handicraft products constituted over 85 percent, while industrial products constituted 14 percent.

VI. Capital Construction

The nation's state farms and reclamation system completed a total investment of 1.62 billion yuan in capital construction. The state's budgeted investment was 610 million yuan, constituting 37.62 percent; funds from private sources amounted to 810 million yuan, constituting 50.1 percent. Domestic loans amounted to 49 million yuan, constituting 3.02 percent. Foreign capital utilized amounted to 11 million yuan, constituting 0.70 percent. The remaining capital of 139 million yuan constituted 8.56 percent. The proportion of state investment was smaller than the previous year, and the proportion of private funds increased.

In total investment, the investment in agricultural construction amounted to 1.104 billion yuan, constituting 67.99 percent (investment in rubber and tropical crops amounted to 272 million yuan, constituting 16.73 percent of the total investment). Investment in the buildup of industries practicing independent accounting amounted to 89.78 million yuan, constituting 5.53 percent. Investment in traffic and telecommunications construction amounted to 7.56 million yuan. Investment in the construction of commerce and foreign trade amounted to 14.41 million yuan. Investment in culture, education, and health amounted to 20.03 million yuan, each constituting a definite proportion.

Newly added productivity or gain that year was mainly as follows: 734,000 mu of cultivated land, reclamation of 290,000 mu for rubber plants, 288,500 mu of established rubber plants, 2,168,000 mu for rubber plant cultivation, and 430,000 mu of grassland construction. Newly added were 3,068 units (178,000 horsepower) of large and medium-size tractors, 938 units (11,000 horsepower) of hand tractors, 1,424 units (126,000 horsepower) of combines, and 1,891 trucks, 46 reservoirs

(260 million cubic meters), 680,000 square meters of housing for livestock, fowl and production, 1,700 warehouses (570,000 square meters), 3.4 million square meters of living space, and 477,000 square meters of school housing. An annual sugar productivity of 13,700 tons was added, and productivity of 16,500 tons in paper production was newly added.

VII. Labor Wages

The nation's state farms and reclamation system had 4,920,300 workers. Each worker had an average annual income of 641 yuan, an increase of 87 yuan over the previous year.

VIII. Scientific Research, Education, Health

The state farms and reclamation system had 48,200 scientific and technical workers; scientific and technical personnel constituted 1 percent of the total number of workers. Scientific research costs in agricultural reclamation in 1980 amounted to 19.21 million yuan, and subsidies for scientific research amounted to 8.84 million yuan. Each scientific research member averaged 4,730 yuan of scientific research funds.

The state farms and reclamation system had 14,147 various types of schools, 161,400 teachers, and 2.84 million students, constituting 25 percent of the total population. The ratio of teachers to students was 1:17.6.

The state farms and reclamation system had 14,346 medical units, 47,800 beds, and 19,000 doctors. There were 4.3 beds for every 1,000 persons, 11.3 percent less than the national average of 4.85 beds [per 1,000 persons]. Every 1,000 persons shared 1.69 doctors, 43.5 percent less than the national average of 2.99 doctors [per 1,000 persons].

Success of Sichuan Joint Venture

Beijing ZHONGGUO NONGKEN [CHINESE AGRICULTURAL RECLAMATION] in Chinese No 6, 24 Jun 81 pp 7-8

[Article by the Joint Livestock, Industry, and Commerce Company of Hongyuan County, Sichuan Province: "Joint Management Has Changed the Backward Situation of Livestock Production"]

[Text] Using the Livestock Farm as the Foundation for Joining With Country-Operated Processing Plants

Our country is a livestock production county: grasslands are widespread, and resources are rich. But because livestock production has remained at a raw material production level for a long period, development of production has been hindered. Last year, according to the spirit of the directives of the higher authorities, in order to enliven the economy in the livestock regions and hasten steps toward modernization of livestock production, the county committee organized forces to survey and study the problems of joint operation of livestock production,

industry, and commerce throughout the county, and sent people to inspect the Roergai joint enterprises. On this basis, a joint business company of livestock production, industry, and commerce was founded.

The company, founded on the basis of five state-run livestock farms in a joint economic venture with the county powdered-milk factory, the joint meat factory, the leather and tanning factory, the county supply and marketing cooperative, and 20 livestock production brigades and 7 communes livestock farms. This type of joint venture has been established on a voluntary and mutually beneficial basis. The ownership system, subordinate relationships, and financial relationships have not changed. The goal of the joint venture is livestock production, with comprehensive operations in livestock production, processing, and commerce. All raw materials are processed into industrial products insofar as possible for direct sale, reducing the number of middlemen. Most of the profits are returned to the farms and the brigades. The distribution of economic profits of the joint enterprises takes into consideration the benefits of the state, locality, enterprise, and collective workers (commune members): (1) Seventy-five percent of the profits realized from the sale of surplus products which cannot be processed at present are returned to the farm and brigades; 10 percent are returned to the business units; and 15 percent are returned to the joint enterprise as funds for the development of production. (2) Seventy percent of the profits realized from roughly processed products are returned to the farm and brigades; 15 percent are returned to the processing units; and 15 percent are retained for the joint venture company; (3) Forty percent of the profits realized from refined processed products are returned to the farm and the brigades; 50 percent are given to the processing units; and 10 percent are retained for the joint venture company. Implementation of this method has mobilized the enthusiasm of all sectors.

Implementation of Joint Venture Has Increased Economic Results

The major achievements after implementation of the joint venture have been as follows:

1. Livestock production has developed greatly. At the end of 1980, the total number of livestock throughout the county reached 480,000 head, a total increase of 21.14 percent. The major products and yields were: 420,000 jin of fresh milk, 990,000 jin of butter, 4.04 million jin of meats, 260,000 jin of wool, 49,000 pieces of sheepskin, 28,000 pieces of cowhide. There were five kinds of products that yielded a surplus over plans: they were meats, milk, hides, wool, and fritillaria bulbs, including 790,000 jin of processed meats, 758,000 jin of milk, and 4,042 pieces of lambskin.

2. An increase of 1,245,000 yuan in income was realized--620,000 yuan from meats, 74,000 yuan from fresh milk, and 176,000 yuan from hides and wool. Profits returned to the farms, brigades, and processing units amounted to 896,000 yuan, constituting 72 percent of the profits realized. Profits returned to the farms and brigades realized from meats amounted to 291,000 yuan. Profits returned to the farms and brigades realized from fresh milk amounted to 29,000 yuan. All the profits realized from fritillaria bulbs were returned to the farms and brigades. After the return of the profits, income from each jin of beef was 76 percent higher

than the procurement price, each jin of mutton realized an increase of 90 percent in income, and fresh milk realized an increase of 10 percent in income.

3. State livestock farms have developed their demonstration function and have stimulated the development of production. The average total increase of livestock at the five livestock farms rose from 19.8 percent the previous year to 22.8 percent, some 8 percent higher than the average of the entire county. Total income of the enterprise increased from the previous year's 726,000 yuan to 904,000 yuan, an increase of 24.5 percent, while profits increased from 25,000 yuan the previous year to 122,900 yuan--a 3.8-fold increase. Four farms turned deficits into profits. The wages of livestock workers increased from a per capita average of 367 yuan the previous year to 584 yuan, an increase of 58.9 percent. Livestock communes and brigades also increased their income.

Several Conclusions

1. The joint venture of livestock production, industry, and commerce must undergo a period of practical examination. Practice in 1980 has proved that the road of establishing joint livestock production, industry, and commerce ventures is correct, and it should be gradually perfected in the future to firmly carry on joint ventures of livestock production, industry, and commerce.

2. Joint livestock production, industry, and commerce ventures must be managed along economic lines. Production must be developed under the guidance of state plans, and economic means must be used to mobilize the enthusiasm of every sector. A surplus of the company's five types of products over plans in 1980 were all realized after the completion of state plans. From the beginning, the joint venture paid attention to returning to the farms and brigades most of the profits realized by livestock product processing, and included them in the contracts. At yearend, promises were fulfilled according to the contracts. The farms and brigades all benefited from the economic joint venture, and enthusiasm increased.

3. Joint ventures of livestock production, industry, and commerce must be suited to local circumstances. They must develop from a small scale to a large scale, from the simple to the difficult, and progress must be orderly and develop gradually.

4. Joint livestock production, industry, and commerce ventures must insist on taking livestock production as the foundation, take the processing of livestock products as the key, and gradually move away from single livestock production to realize unification of livestock production, industry, and commerce.

5. Joint ventures of livestock production, industry, and commerce must fully realize the superiority of the joint economic venture so that the state can collect more taxes, the company can realize increased accumulation, the factory can realize increased profits, the farms and brigades can realize increased income, and the workers and commune members can realize increased income--i.e., realize the "five increases." After implementation of the joint business venture, the taxes submitted by just two processing units increased from 212,000 yuan the previous year to 288,000 yuan, an increase of 35.87 percent. The income of the

farms and brigades in 1980 increased 20.4 percent over the previous year, equivalent to an average increase of 37.9 yuan in the personal income of the people engaged in livestock production throughout the entire county. One-half of this was received from the increased income of the joint venture. While the processing units increased their profits, they increased rewards and collective benefits by 8 percent according to policy stipulations. The net income of each person in the livestock production brigades of the entire county increased from 194 yuan the previous year to 240 yuan--an increase of 27.7 percent.

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RESPONSIBILITY SYSTEM MEASURES FOR STATE FARMS

HK160248 Beijing CHINA DAILY in English 16 Sep 81 p 1

[Text] The system of full responsibility has been adopted on state-owned land reclamation farms throughout China and progress has been made. Further measures have been taken to improve the system.

Under the system, the state sets tasks for farms to complete within a specific time.

Farms are entitled to use their surplus as seen fit if they overfulfill their tasks. They have to take responsibility and solve financial problems on their own if they fail to fulfill the tasks and have a deficit.

When the system was adopted in 1979, instead of having losses 12 years running on state-owned land, reclamation farms made a profit of 520 million yuan. Total grain output reached 14 billion jin (1.1 pounds) and 4.86 billion jin was delivered to the state, a rise of 12 percent and 27 percent over 1978 respectively. In 1980 they made a profit of 659 million yuan, produced 15.3 billion jin and delivered 6.1 billion jin to the state.

A meeting of the Ministry of Land Reclamation and the Ministry of Finance adopted four new measures to improve the system:

1. The extent of the full responsibility system has been clearly defined. Each higher office is to set a clear task for their subordinate organizations to carry out.

2. The task should be carefully defined. Those for farms which can make more profits because of better land conditions and equipment should be heavier.

3. Surpluses should be used properly--for reproduction, technological innovations, bonuses and for reserve funds.

4. Management and financial discipline should be strengthened.

CSO: 4020/248

BRIEFS

SHELLED PEANUT EXPORT--Beijing, 12 Sep (XINHUA)--China exported 240,000 tons of shelled peanuts between November 1980 and July this year, according to the China National Cereals, Oils and Foodstuffs Import and Export Corporation. Annual exports ranged from 20,000 to 40,000 tons between 1969 and 1979, the corporation said. [Text] [Beijing XINHUA in English 0707 GMT 12 Sep 81 OW]

PROSPEROUS COUNTIES--Beijing, 7 Sep (XINHUA)--According to data released recently by the Ministry of Agriculture, China in 1980 had 343 counties with per-capita income from collective sources exceeding 150 yuan. This was 50 percent more than in 1979 and accounted for 14.2 percent of the total number of 2,404 counties in the whole country. Statistics show that among these well-to-do counties 143 had an average per-capita income from collective sources exceeding 200 yuan, 22 exceeding 300 yuan and 5 exceeding 400 yuan. The county with the highest per-capita income was Rutog County of Xizang Autonomous Region, where each individual earned an average income of 488.47 yuan. [OW081331 Beijing XINHUA Domestic Service in Chinese 1243 GMT 7 Sep 81]

CSO: 4007/579

BRIEFS

LUAN PREFECTURE RICE--As of 9 September, Luan Prefecture, Anhui, had procured 304.18 million jin of rice, overfulfilling the year's early rice procurement task by 1.4 percent. The prefecture has reaped a good early rice harvest from more than 2.16 million mu of ricefields this year. [OW141312 Hefei Anhui Provincial Service in Mandarin 1100 GMT 11 Sep 81]

HUAIYUAN COUNTY FARM MACHINERY--Hefei, 14 Sep (XINHUA)--In less than 3 years, the number of hand-opened tractors in Huaiyuan County, Anhui, has increased by more than 5,000 units. This is over three times the total number of farm machinery purchased by the county over the previous 20 years and more. Last year, over 680,000 mu, or over 40 percent, of the farmland in Huaiyuan County were tilled by farm machinery. [Beijing XINHUA Domestic Service in Chinese 0030 GMT 14 Sep 81]

CHUXIAN GRAIN PRODUCTION--Hefei, 15 Sep (XINHUA)--According to GUANGMINC RIBAO, Anhui's Chuxian Prefecture has promoted both family planning and the system of responsibility in production since 1979. As a result, the total grain output of the prefecture increased from 2.56 billion jin in 1979 to 3.21 billion jin in 1980, while the natural population growth rate dropped from over 15 per thousand in 1977 to 7.29 per thousand in 1980. [OW201319 Beijing XINHUA Domestic Service in Chinese 0743 GMT 15 Sep 81 OW]

CSO: 4007/592

cooperation, these two farms turned deficits into profits, and scientific research work was also popularized and profoundly launched, saving a lot of investment in experiments.

On the basis of conscientiously summarizing last year's trials, this year the concerned leading agricultural departments and scientific and technical units are grasping the signing of agricultural technical service contracts more tightly. The major leading comrades of Changping County personally supervise and inspect the implementation of the contracts; at present, the projects that have been implemented lead the whole city's agricultural system. A deputy director of the city's Agricultural Sciences Academy manages this work, and cadres have been transferred to establish a scientific and technical consulting service department. The various research institutes subordinate to the Agricultural Sciences Academy have all named a deputy director to take charge of scientific and technical services. Because organization has been grasped tightly, scientific and technical services work has been launched more concretely.

9296
CSO: 4007/557

BRIEFS

RULES FOR COMMUNES--The Fujian Provincial Agricultural Commission has recently set rules on reducing the heavy burden on commune members. It forbids communes and brigades to apportion expenses or work to commune members without proper authorization. Cadres at the production brigade level are to be supported by commune members and are limited to 2 - 4 while those at the production team level are limited to 1 - 2. Non-production expenses are to be further reduced. [OW081301 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 7 Sep 81]

XIANYOU COUNTY SUGAR OUTPUT--Fuzhou, 18 Sep (XINHUA)--Xianyou County, Fujian, grew 120,000 mu of sugarcanes in the 1980-81 sugarcane growing season. The average sugar output per mu of sugarcane exceeded 1,600 jin. [Beijing XINHUA Domestic Service in Chinese 0150 GMT 18 Sep 81 OW]

CSO: 4007/592

BRIEFS

MINQIN COUNTY RESERVOIR--Second stage construction on the Hongyashan reservoir in Minqin County, the biggest in the desert area of Gansu Province, was completed recently. The project has been inspected by the department concerned and will soon be commissioned. Located on the north of the Hexi corridor and the lower reaches of the Shiyang River, the Hongyashan reservoir is a large low-lying reservoir in a desert area. The height of the reservoir is 14.5 meters. Its length is 8,360 meters. Its capacity is [figure indistinct] cubic meters. The area of the reservoir is 30 square kilometers. First stage construction began in 1958 and was completed in 1964. Second stage construction began in 1973. The reservoir will help relieve irrigation problems in Minqin County. [SK061054 Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 5 Sep 81]

FORESTRY CONFERENCE--The Gansu Provincial CCP Committee and the provincial people's government recently convened a forestry conference which urged that achieving measures adopted under the provincial unified plan and checking unlawful fellings should be regarded as emergency tasks in developing forests. The conference held that to guarantee forest development, we must implement the policy stating that forests can be owned by those who have planted them, grant mountainous waste land for afforestation and improve forestry responsibility systems. The conference also reviewed achievements scored in 1981 afforestation, saying that the province planted over 900,000 mu of trees in the spring and overfulfilled its annual afforestation plan. The province has made great progress in developing individually-owned forests. This spring over 180,000 mu of individually-owned forests were planted. This accounted for 20 percent of all afforested acreage. [SK071054 Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 6 Sep 81]

HUAN COUNTY ANIMAL HUSBANDRY--Lanzhou, 16 Sep (XINHUA)--Huan County in Gansu Province has become a county noted for its animal husbandry. The county has now over 600,000 sheep and over 90,000 large domestic animals. [Beijing XINHUA Domestic Service in Chinese 0154 GMT 16 Sep 81 OW]

CSO: 4007/592

RESPONSIBILITY SYSTEM, SCIENTIFIC TEHNIQUES BOOST YIELDS

Shijiazhuang HEBEI RIBAO in Chinese 10 Jul 81 p 1

[Article: "Implementing Production Responsibility System and Popularizing Scientific Management Techniques; Shijiazhuang Prefecture Defeats Drought and Achieves Bumper Harvests of Summer Grains"]

[Text] Shijiazhuang Prefecture has implemented the wheat production responsibility system and popularized scientific management techniques, defeated severe drought and low temperature damage, and realized a bumper harvest of summer grains. Of the 17 counties in the whole prefecture, 15 counties realized increased yields. According to sample surveys of the statistics department, the total yield of summer grains this year reached 2.27 billion jin, an increase of 370 million jin over the previous year, and the yield per mu was 480 jin, an increase of 73 jin over the previous year. The yield contributed 500 million jin to the state.

Ninety percent of the production teams of Shijiazhuang Prefecture established the wheatfield management responsibility system, and 15 percent of them practiced the responsibility system of joint production by the workers. Implementation of the production responsibility system mobilized the enthusiasm of the cadres and commune members to manage the wheatfields well, and also increased the quality of sowing. Generally, 5 cubic meters of fertilizer were applied per mu, the land was finely prepared, the seedlings were inspected and supplemented in time, problems of missing seedlings and broken ridges were solved, and irrigation was timely and even. After Jingxing County implemented the wheat production responsibility system, commune members thought of many ways to draw water and irrigate more, and developed existing water conservancy facilities. Excluding 40,000 mu of wheatfields that could not be irrigated, 150,000 mu produced bumper harvests, and the total yield increased by more than 10 percent over last year's.

The leadership at each level of the entire prefecture respected science and paid attention to the popularization of the experience of scientific management of wheat when guiding wheat production. Technical consultants and technical personnel were invited during each key season of production to inspect the wheatfields and to propose management techniques to adapt measures to local circumstances and to suit measures to the conditions of the seedlings, so as to strengthen management. In the sowing, 250,000 to 300,000 basic seedlings were maintained according to the different water and fertility conditions of each locality.

Eighty percent of the wheatfields were planted in time between 25 September and 15 October. Early management was strengthened, and the seedlings were stimulated to develop early, so that the number of roots, number of leaves, number of tillers, and number of spikes all increased. To increase grain weight, each locality grasped tightly the key measure of irrigation. Many ways to increase irrigation were used. Throughout the prefecture, 3.91 million mu of wheatfields were irrigated five times, and 2.84 million mu of fields were irrigated six times. With stable temperatures before the wheat matured, and with the greater difference between day and night temperatures, the weight per 1,000 grains increased 5 to 8 grams over last year.

9296
CSO: 4007/550

BRIEFS

WHEAT HARVEST--Wheat harvest is near completion in Heilongjiang Province except some areas in the northern part. According to 28 August statistics, the province harvested 24 million mu of wheat, over 80 percent of all. This year some 8.3 million mu of wheatfields were afflicted by waterlogging and floods. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 29 Aug 81]

BEET HARVEST--Heilongjiang Province sowed some 3.85 million mu of beets this year. Since July, many localities have been hit by rainstorms, hailstorms and insect pests, resulting in 900,000 mu of affected farmland. The province still expects a bumper beet harvest. It is estimated beet output will reach 3.2 million tons, more than last year. The provincial people's government recently issued a circular urging localities to strengthen late-stage field management. [SK022227 Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 1 Sep 81]

LIVESTOCK BREEDING--Harbin, 5 Sep (XINHUA)--Since the Heilongjiang Provincial CCP Committee and the provincial people's government decided in 1980 to lift the restriction on the number of livestock raised by commune members, household livestock breeding has been greatly developed in Heilongjiang. The number of beef cattle raised by commune members through the province has increased from 800 head in 1978 to 169,000 head at present, dairy cattle from 300 head to 25,000 head and sheep from 331,000 head to 2.04 million head. [OW081305 Beijing XINHUA Domestic Service in Chinese 1224 GMT 5 Sep 81]

BEET HARVEST--The Heilongjiang Provincial People's Government held a provincial telephone conference on the beet harvest 4 September. Zhang Wenlin, deputy secretary general of the provincial people's government, presided at the conference. Hou Jie, deputy governor of the province, spoke. The conference pointed out: The province sowed some 3.84 million mu of beets this year, 340,000 mu more than planned. It is estimated that the beet output will reach 3.2 million tons. However, waterlogging and insect pests have not been eliminated in the eastern part of the province. Therefore, efforts should be continued to overcome these calamities. It is planned that all sugar plants in the province will begin operations on 1 October. The proper time to harvest beets is from 1-20 October. [SK051024 Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 4 Sep 81 SK]

CSO: 4007/592

STATISTICS ON PURCHASE, SALE OF FOOD GRAINS

Kunming YUNNAN RIBAO in Chinese 7 Jul 81 p 4

[Article: "Fifteen Counties in Henan Contract Work for the Difference in Purchase and Sale of Food Grains; Unified Sales of State Food Grains Greatly Reduced"

[Text] Xinhuashe, Zhengzhou, 6 July--Annual statistics of food grain production in Henan Province for the [agricultural year 1980, ending [on 30] June of this year, showed that after 15 counties in Henan Province implemented contracting work for the difference in purchase and sale of food grains, unified sales of state food grains were greatly reduced, compared to the goals for contract work given to these counties by the province, and a total surplus of over 170 million jin for the year was effected.

Beginning in 1979, the Henan provincial committee of the Chinese Communist Party decided to implement contracting work for the difference between the purchase and sale of food grains in farm villages, in order to help counties in the mountainous regions and poor counties quickly change their situation. The method of contracting was to let the province determine the amount each county should turn over to the state or to sell uniformly to the state, according to the difference between procurement and uniform sales of food grains of the farm villages of each county over the past 3 years. Based on this, the county determines the amount for each commune and brigade. The goals of contracting work were set for 3 years; except for especially severe natural disasters, generally bumper harvests of deficient harvests were not changed and the food grains conserved were given to the county.

Implementation of contracting work for the difference in the purchase and sale of food grains in farm villages mobilized the productive enthusiasm of the masses. The counties were given some autonomy over food grains, and they could use part of the food grains for farmland water conservancy construction and for the development of diversification. Dengfeng County, which had been poor and backward for a long time, implemented contracting work for the difference in the purchase and sale of food grains. In the 2 years after implementation, the average food grains per capita increased 134 jin, saving the state 7.82 million jin in unified sales of grains. After Luanzhou County implemented contracting work, conscientious studies were carried out on how best to utilize food grains. It was decided to use part of the food grains to support commune and brigade enterprises and to serve

as rewards for development in forestry, livestock production, and sideline production. In 2 years the entire county completed afforestation of 365,000 mu of waste mountain land; this was equivalent to the total of the area of forestation over the past 15 years. The number of large livestock increased to over 33,000 head, and live hogs, domesticated fowl, and beekeeping also developed greatly. Because of the implementation of contracting work for the difference in the purchase and sale of food grains, transportation back and forth was reduced, and a considerable amount of cost was conserved. According to statistics, the 15 counties saved 1.29 million yuan in transportation costs in 1980 and reduced the deficit by 2.07 million yuan.

9296
CSO: 4007/550

NANJING SUBURBAN FAMILIES ENGAGE IN DIVERSIFICATION

Nanjing XINHUA RIBAO in Chinese 21 Jul 81 p 1

[Article by Liu Ning [0491 1380]: "High Labor Productivity Rate, High Commercial Commodities Rate, High Economic Income; Over 4,000 Key Families and Specialized Families Engage in Diversification in Suburban Counties of Nanjing Municipality"]

[Text] The most recent survey by the Nanjing Municipal Agricultural Department reveals that over 4,100 key families and specialized families engaging in diversification are providing large amounts of supplementary foodstuffs for the city, using their own management methods.

According to incomplete statistics, these specialized families and key families, who are engaged mainly in raising domesticated animals, constitute only 1 percent of the total number of farm families, but the amount of commercial products from hogs and fowl and of eggs provided by each specialized family is on the average equivalent to the amount of commercial products provided by 8.7 commune member families. The yield of some specialized families even has approached and surpassed the yield of one production team. This year, these more than 4,100 key families and specialized families have already or will have earned an income of 4.8 million yuan, equivalent to 8.9 percent of the income from the sideline production of suburban counties throughout the city last year. A number of high-yield families has also emerged; there are 318 families with a production value of over 2,000 yuan, and 80 families with a production value of over 3,000 yuan.

Most of the specialized families and key families in the suburban counties of Nanjing Municipality have developed rapidly within the past 2 years. This is the result of overthrowing chaos and reinstating the correct. The suburban counties of Nanjing span the two banks of the Changjiang. There are mountains and water, and resources are rich. Historically, the farmers had engaged in raising domesticated animals and in planting and weaving as a tradition. But some years ago, under "leftist" ideological guidance, commune members who engaged in diversification were criticized for minor things and were punished for being more active. After the Third Plenum, the party's policy was implemented in the suburban counties, family sidelines of commune members gradually revived, and key families and specialized families emerged. This year, the Nanjing Municipal party committee and the people's government of the city established 15 measures to encourage farmers to develop diversified production, called upon the 21 specialized families in the four suburbs of Yuhua, Qixia, Pukou, and Dachang to

hold discussion meetings, and summarized and popularized their experiences. Key families and specialized families in the suburban counties mushroomed.

Now, 80 percent of the collective hog farms and chicken farms in the suburban counties of Nanjing Municipality have been contracted to the workers or to the families to manage. There are over 24,000 skilled craftsmen who have signed contracts with production teams as individuals or families, contracting a total of over 70,000 mu of water surface area, unclaimed hilltops, and infertile land. The management method of the key families and specialized families generally involves only one endeavor developed in a versatile manner according to market needs to supplement market supply shortages. The products include several dozen varieties, from the raising of hogs, ducks, chickens, and fish to the cultivation of clams, tremella, mushrooms, the raising of dairy cows, and the raising of martens and planting of fruits and melons, young trees, and flowers. Because the key families and specialized families all possess a skill and pay attention to economic results, their adaptability is strong, and in providing supplementary foods for the city they have developed a greater and greater function. They have three advantages:

The first is that the labor productivity rate is high. According to surveys conducted of the 21 key families in Qixia, Pukou, and Yuhua last year, there were 44 full-time, part-time, and assistant laborers engaged in sideline production, creating a production value of 37,200 yuan. Each person created an average production value five times that of a collective sideline production worker.

The second is that the commercial commodity percentage is high. Last year, the 16 key families engaged in raising animals supplied to the market an average of 5.5 fat hogs per family. Families raising domesticated fowl provided an average of 93.5 birds per family; familes producing eggs provided an average of 85 jin per family. They all surpassed the average amount sold to the state by each farm family of the whole city fourfold, 23 times, and 7.4 times, respectively. Zhu Wencai [2612 2429 2088], of the Nanyu fourth team of Jiangdong Commune in Yuhua Ward, last year contracted for the raising of 50 hogs of the collective and also raised two sows himself and bred his own pigs. He sold 32 fat pigs and 15 young pigs to the state. This year, he sold 10 fat pigs and kept over 40 pigs in the pen, and within a year he can again sell 20 pigs.

The third is that economic income is high. A survey of the 10 key families conducted by Daqiao Commune in Jiangpu County last year showed that 21 people were participating in collective labor and earning an income of 6,172 yuan. an average of 123 yuan per person, while the 2 full-time laborers, 3 assistant laborers, and 21 part-time laborers who were engaged in specialized labor created a net income of 13,107 yuan, for an average income of 504 yuan per person.

In addition, the development of specialized families and key families to engage in diversified production benefits the popularization of science and technology and opens up new employment opportunities for the surplus labor force in farm villages.

9296
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BRIEFS

XUZHOU AUTUMN SOWING--All counties in Jiangsu's Xuzhou Prefecture go all out to prepare for autumn sowing. As of present, they have prepared 22 million cubic meters of manure and repaired 36,000 walking tractors. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 18 Sep 81 OW]

CSO: 4007/592

BRIEFS

CIRCULAR ON DROUGHT--The Jiangxi Provincial People's Government recently issued an emergency circular on combating drought and exterminating insects. In the circular the government asked all local governments to make all-out efforts to fight the drought and control the insects in order to insure a bumper harvest. There has been little rainfall in Jiangxi since early August. As a result, most of the farmland is suffering from lack of water. At the same time, there appears to be an outbreak of serious plant diseases and insect pests, which are threatening the growth of late rice and other crops. [OW151217 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 14 Sep 81 OW]

CSO: 4007/592

BRIEFS

PADDY RICE CROP--Liaoning Province expects to reap more than 5 billion jin of paddy rice this year, a record high. This figure will be 300 million jin more than the 1980 figure. [SK181050 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 17 Sep 81 SK]

POSTFLOOD REHABILITATION--Shenyang, 4 Sep (XINHUA)--People in six counties in Dalian and Yingkou Prefectures in southern Liaoning, which were inundated in late July following the heaviest rains in a century, have quickly resumed production by relying on their own efforts. With assistance from local PLA units, damaged power transmission lines and telephone cables have been reinstalled, interrupted railway and highway communications have resumed, hospitals and schools have reopened and victimized people have been housed in simple, newly built shelters. Today flood water has also been drained from 800,000 mu of waterlogged cropland and 50,000 mu of crops and 200,000 fruit trees have been replanted. [Beijing XINHUA Domestic Service in Chinese 1302 GMT 4 Sep 81]

CSO: 4007/579

BRIEFS

CATTLE BREEDING COMMITTEE--Hohhot, 13 Sep (XINHUA)--A committee for breeding Swiss Simmental cattle in China has been established in Tongliao, according to the Animal Husbandry Department of the Inner Mongolia Autonomous Region. This is one of the world's fine strains. The committee will organize nation-wide breeding of pedigree Simmentals and carry out scientific research and technical exchanges in improving Chinese cattle species by crossbreeding. China began raising Simmentals in the 19th century. It imported a herd of the cattle in recent years. Now the country has 3,000 pedigree Simmentals, most of them in Inner Mongolia. [Text] [Beijing XINHUA in English 0145 GMT 13 Sep 81 OW]

GRAIN STORAGE--According to statistics compiled at the end of August, Bayannur and Ulanqab leagues and Hohhot and Baotou municipalities, Nei Monggol, put some 31 million jin of public grain in storage, an increase of 68.3 percent over the corresponding 1980 period. [SK171157 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 16 Sep 81 SK]

DIVERSIFIED ECONOMY--Bayannur League, Nei Monggol, has achieved remarkable success in developing diversified economy. In 1980 the total income from forestry, animal husbandry, sideline production and fishery accounted for 36.5 percent of the total agricultural output value. Compared with 1978, the 1980 beet and sunflower output increased by 1.6-fold and 17.6-fold respectively. Per capita income from the collective distribution was up to or over 100 yuan in one-third of banners and counties and in 36.5 percent of communes. This year the league increased beet- and sunflower-growing areas by 1 million mu respectively over that in 1980. Therefore, still greater success is expected. [SK111000 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 10 Sep 81]

CSO: 4007/579

ACHIEVEMENTS IN AGRICULTURAL SCIENCE, TECHNOLOGY OUTLINED

Xian SHAANXI RIBAO in Chinese 10 Jul 81 p 1

[Article by Gao Boping [7559 0590 1627] of the Scientific Education Department of the Provincial Agricultural Burea: "Since the Founding of the Nation, Agricultural Science and Technology in Our Province Have Realized Visible Achievements; of a Total of Over 400 Scientific Research Results, Over 200 Have Already Been Widely Used in Production"]

[Text] Over the past more than 30 years since the founding of the nation, our province's agricultural science and technology have realized rich achievements under the leadership of the party and the people's government and they have served to promote the development of agricultural science and production in the entire province.

According to statistics, over 30 years a total of over 400 scientific research results have been achieved, and over 200 of them have already been widely used in production. Professor Zhao Hongzhang [6392 3163 3864] of the Northwest Agricultural Academy bred the bima No 1 and fengchan No 3 superior wheat varieties, which have been popularized over more than 14,000 mu throughout the nation. The results of increased yields of the wheat varieties "shaan zao No 1," bred by the Provincial Food Grain Crop Research Institute, "xiao yan No 6," bred by the Northwest Plant Research Institute, "xi yu No 7," bred by the Northwest Water and Soil Preservation Research Institute, and "shaan he No 6," bred by the Heyang County Agricultural Science Institute have all been good. Generally, each mu produces an increased yield of 20 to 30 percent. The hybrid paddy rice that was introduced into the province for popularization in 1977 has expanded to 670,000 mu in 1980 and has realized a net gain of 270 million jin in rice grains. The superior varieties of "shaan mian No 4," "shaan 401," and "shaan 1155" cotton, which are highly resistant to fusarium wilt of cotton, were bred by the Provincial Cotton Research Institute; they have been popularized over more than 1.6 million mu within the province and outside the province. The superior varieties of rape "shaan you 110" and "shaan you 741," which are resistant to cold in our nation's northern regions and were bred by the Provincial Special Crop Research Institute, have created record bumper harvests of 200 to 300 jin per mu over large areas. Our province's plant protection workers joined with the seed and popularization departments and developed and popularized a comprehensive method of prevention and control of heat smut of corn, based on the disease-resistant varieties, thus reducing the

loss of food grains by over 200 million jin. The Provincial Plant Protection Institute and the Plant Protection Department of the Northwest Agricultural Science Academy worked in cooperation to popularize prevention and control measures based on antirust varieties which have served visibly to control damage by wheat rust disease. Through many years of experimentation, soil fertilizer workers have basically solved the technical problems of cultivating sweet clover and vetch as green manure and have come to understand the application techniques of phosphorous fertilizers, overturning the historical conclusion that loess is not deficient in phosphorus. They completed a province-wide general soil survey and general surveys of fertility and water, and scored visible achievements in the improving low-yielding soils. In vegetables, they summarized a set of techniques for cultivating high yields of fresh hot peppers and artificial drying techniques. The yield per mu increased from over 100 jin to 400-500 jin, while the drying rate increased from 20 percent to 30 percent. Superior varieties of cucumbers, carrots, cabbage, western red persimmon and new varieties of applies, peaches, and watermelon were bred. In livestock production and veterinary medicine, a high-milk-yielding goat was bred, and over 800,000 head have been popularized throughout the nation. A new species colony of fine wool sheep was bred, and visible achievements have been made in the research of breeding Guanzhong draught horses and in early maturity and beef characteristics of Qinzhou cows. Research in the technique of freezing the semen of the Guangzhong donkey and the southern Shaanxi water buffalo was successful. The Contagious diseases rinderpest, contagious pleuropneumonia of cattle, and blackleg were eradicated. The causes of blindness in sheep, "roof rotting" disease of draft cattle, diarrhea in donkeys, and black spot disease due to poisoning by the green lemon tree leaves and sweet potato black spot disease, which have caused the death of large numbers of draft cattle in southern Shaanxi, have been discovered, a method of prevention and control has been found, and the damage has been controlled.

These achievements have served greatly to stimulate the development of our province's agricultural science and production. Under the direction of the famous entomologist Professor Zhou Yao [0719 1031], our nation revealed for the first time the habits and the patterns of occurrence of wheat midge and effectively guided prevention and control work. The study of the "golden winged noctuidae" discovered 23 new species and 1 new subspecies and new records of 23 species. Cotton specialist Yu Qibao [0205 0796 5508], pathologist Shen Qiyi [2088 0366 0001], and Professor Chou Yuan [0092 0337] proposed organizing a national joint evaluation of the physiological types of fusarium wilt of cotton and clarified the regional distribution of the physiological types of fusarium wilt of cotton in our nation and the manifestations of resistance and infection of the varieties. They broke through the long-held belief of foreign nations that the whole world has only "four physiological forms." The Northwest Agricultural Academy studied the ancient agricultural remains in our nation and compiled and published over 20 special works on paleoagriculture; the explanatory notes to the "fan sheng zhi shu," "qi min qao shu," and "mong zheng quan shu" have exerted a great influence in our nation and have been noted by foreign specialists and scholars.

The realization of a large number of scientific research achievements have been the result of the attention paid to agricultural science and technology by the party and government. Before liberation, our province had only three agricultural

experimental stations--at Jingyang, Dazhi, and Nanzheng--and 20-plus technicians. The work was very difficult. Within the short period of just over 30 years, under the correct leadership of the party, agricultural science and technology have developed rapidly. At present, an agricultural science research body of the entire province has been preliminarily formed. There are more than 1,600 provincial-level agricultural science research personnel, teaching personnel, and local and municipal scientific and technical personnel, and over 700 research personnel above the assistant researcher level. The province has established 11 specialized research institutes and 6 experimental farms. Ten localities and cities have established agricultural science research institutes. In recent years, each level of the party organization has grasped the implementation of the policy concerning intellectuals, the evaluation of technical duties, and the policy of rewards for scientific research achievements. All this has greatly mobilized the enthusiasm of scientific and technical personnel and forcefully stimulated the development of agricultural science and technology.

9296
CSO: 4007/550

STEPS TAKEN TO COMBAT FLOODING IN HANZHONG PREFECTURE

Xian SHAANXI RIBAO in Chinese 15 Jul 81 p 1

[Article: Hanzhong Prefecture Suffers Flood Damage; Cadres and Masses Exert All-Out Efforts To Prevent Flooding and Save Those in Danger"]

[Text] On the afternoon of 13 July, Mianxian, Lueyang, Ningqiang, Nanzheng, Chenggu, Liuba, and Yanxian [counties] and a portion of Hanzhong city in Hanzhong Prefecture were damaged by severe flooding, and great loss of life and property has been incurred. After the disaster, cadres at each level went immediately to the disaster area to organize the masses to resist the flooding and save those in danger.

Since the beginning of July, rain has fallen continuously in Hanzhong Prefecture, on the 13th and the 14th, heavy rain and rainstorms occurred continuously. During the 2 days, rainfall in the five counties of Mianxian, Lueyang, Ningqiang, Nanzheng, and Liuba totaled over 100 millimeters, reaching a high of 200 millimeters. Riverwater in Hanjiang and its tributaries rose dramatically, ponds were full and reservoirs overflowed, and floodwater rushed into the Hanjiang, causing the Hanjiang dike to burst in several places. According to preliminary statistics from Mianxian, Hanzhong, Nanzheng, and Chenggu counties, 18 communes, 47 brigades, and more than 60,000 people were affected. In many villages, not a house was left standing. Most of the houses had collapsed, and people and animals were injured or killed. The 200,000 mu of paddy ricefields along the Hanjiang were submerged. The Hanzhong prefectural party committee and the administrative office of the prefecture issued an emergency notice to each county on the 13th. Two groups of cadres were transferred on one morning of the 14th, and at noon, led by seven deputy secretaries and deputy commissioners, they went in separate groups to Mianxian, Chenggu, Nanzheng, and Hanzhong counties and [Hanzhong] city to help prevent flooding and save those in danger. Flood prevention and emergency measures are being carried out, and most of the people have been evacuated safely.

9296
CSO: 4007/550

BRIEFS

HARVESTING PROGRESS--Hanzhong, 13 Sep (XINHUA)--To minimize the losses caused by flood, people in the flood-stricken Hanzhong Prefecture in Shaanxi have been rush reaping the fall crops and replanting the summer crops. As of early September, the prefecture had reaped 60,000 mu of rice and 250,000 mu of corn, cultivated 30,000 mu of rapeseed and replanted 50,000 mu of vegetables. Because of the flood, over 2.7 million mu of the prefecture's 3.89 million mu of crops have been either damaged or totally washed away. It is estimated that this year's grain output in the prefecture will be 40 percent lower than the planned target. [Beijing XINHUA Domestic Service in Chinese 1707 GMT 13 Sep 81]

CSO: 4007/579

PLA UNITS HELP COMBAT DROUGHT, HARVEST BUMPER WHEAT CROP

Jinan DAZHONG RIBAO in Chinese 24 Jul 81 p 1

[Article: "PLA Units Stationed in Our Province Support Agricultural Production in a Big Way, Contributing Efforts To Realize a Bumper Harvest in Year of Severe Drought"]

[Text] The PLA units stationed in Shandong have developed the glorious tradition of supporting the government and loving the people, and have given material and financial assistance to support our province's agricultural production. According to statistics in the first half of this year, PLA units stationed at various localities throughout the province supported agriculture to the extent of over 698,000 working days, providing 19,000 tons of various fertilizers, helping to plant 1.13 million trees, repairing 61,000 meters of canals, and sinking 143 wells.

PLA units stationed in our province grasped the support of agricultural production as an important task in supporting the government and loving the people. During the key periods of each spring planting and sowing, "the three summer," and the "three autumn" busy farming seasons, and in drought and flood resistance and planting and afforestation, large numbers of battle commanders were assigned to provide support. This spring, our province encountered severe drought such as had not been seen for many years, causing great difficulties for seizing bumper harvests of wheat and timely spring sowing. The commanding officer of the Jinan troops issued an emergency notice instructing subordinate troops to take immediate action to give massive support to the farm villages where they were stationed in order to resist drought, save the wheat, and preserve spring sowing. Troops stationed in each locality quickly assigned over 10,000 battle commanders to the frontline of drought resistance and joined the masses of commune members in digging ditches and building canals, sinking wells and building stations (water-raising stations), digging mountain springs, and cutting off underflow, and used many methods to expand the area of irrigation. A certain unit stationed in Jiaoxian dispatched 42 companies of over 2,400 soldiers to help commune brigades repair over 2,500 meters of canals, sink a large well, and increase the irrigated area by over 3,000 mu. They hauled water and carried out dibble-planting. Over 1,700 mu of wheatfields were irrigated. A certain unit stationed in Wendeng County helped the local farm village to resist drought in a big way, and at the same time sent a group of battle commanders to help the Kunlunshan forest farm plant

6,700 mu of trees for forestation. To thank the PLA for the unselfish help, the forest farm named the forest planted by the POA "8-1 forest" and established a plaque in commemoration.

In helping the localities to resist drought, many troops supplied the people with what they needed, assigned automobiles, water pumps, and electric motors which the troops had been using to the localities for use in drought resistance, and dispatched farm machinery repair teams to go deep into the fields to inspect and repair various types of farm machinery totaling over 12,900 units (pieces).

Through the broad united struggle of the people and the military, our province seized a bumper harvest of wheat in this year of severe drought, the growth of the various spring and summer sown crops is good, and bumper harvests are hopeful.

9296
CSO: 4007/557

RESPONSIBILITY SYSTEMS FOR STATE FARMS, RECLAMATION ENTERPRISES

Deficit Turn Into Profits

Taiyuan SHANXI RIBAO in Chinese 5 Jul 81 p 3

[Article by Yu Xizhi [0060 6932 4363]: "Our Province's State-Run Agricultural Reclamation Enterprises Have Established Many Forms of the Production Responsibility System; Reversing the Deficits of Many Years, Last Year a Profit of Over 1.3 Million Yuan Was Realized"]

[Text] The 34 state agricultural reclamation enterprises in Shanxi Province have all established different forms of the production responsibility system during the past 2 years, and they have realized visible economic results.

State farms mainly engage in planting, raising livestock, and industrial and sideline production. This is the same as the production teams of the people's communes in farm villages. But they belong to the system of ownership by the whole people; they implement a fixed eight-level wage system, which is different from the people's communes in farm villages. Therefore, a production responsibility system must be established in line with this characteristic. After the Third Plenum, the broad numbers of cadres and workers on state farms liberated their ideology, practiced daringly, and established various forms of the production responsibility system which have already showed their power. After removing the deficit in 1979 for the first time, last year there was a net profit of 1,327,000 yuan, an increase of tenfold over the previous year. Except for the reduced yield of food grains because of disasters, the other economic indicators all fulfilled their plans with surpluses, and some even reached the best levels in history.

At present, our province's agricultural reclamation enterprises practice the following six forms of the production responsibility system:

1. Livestock farms raising dairy cows implement the system of having a fixed number of cows per person and a fixed yield (of milk) based on the number of cows, supplying feed according to yield, and giving rewards for surplus yields. Last year, when the Hongqi livestock farm in Yanbei Prefecture implemented this method, the yield of milk increased by more than 6.4 million jin over the previous year, and increased income of more than 1.7 million yuan was realized.

2. Farming and livestock farms engaged mainly in planting implement the responsibility system of several quotas and one reward, fixed investment, fixed quotas for yields, fixed production value, fixed profits, and fixed investment of work. After the Taiyuan agricultural and livestock farm implemented this method, the area of cultivated land for which each laborer was responsible increased from the original 35 mu to 60 mu, the number of people in the farming teams was reduced from 280 to 170 persons, the remaining labor force engaged in diversification, and the annual profit was 110,000 yuan.

3. Implementation of responsibility wages, or floating wages. Ordinarily, 90 percent of personal wages are paid each month to the leadership and workers of the farm, while the remaining portion, called responsibility (floating) wages, is paid at yearend according to the degree of completion of personal production tasks. When the Linfen fruit tree farm implemented this method last year, a large bumper harvest resulted. Total yield reached over 7 million jin, and the profit for the year was 530,000 yuan.

4. Contracting single jobs to specialists and bearing profit or loss proportionally according to surplus or reduction in production. This means that certain productive jobs on the farm are contracted to individuals, and surplus or reduced yields are proportionally borne according to contract.

5. Contracting large jobs. This form is used mainly in accounting for single units of automobiles and tractors or contracting work for single units of machinery. Sometimes it is also used in industrial and sideline production counted by single units.

6. Technical responsibility system. This form is based on product percentage, using a certain technical standard as the criterion for reward or punishment. Its results are more visible in technically intensive production projects.

'A Welcome Change'

Taiyuan SHANXI RIBAO in Chinese 5 Jul 81 p 3

[Commentary: "Welcome Change in Agricultural Reclamation Enterprises"]

[Text] Implementation of the production responsibility system in farm villages has solved the problems of clothing and food for commune members in poor and backward regions, and the productive rate has increased. Now, there is news that our province's state agricultural reclamation enterprises have established the production responsibility system and have changed deficits to profits, and that visible results have been realized. This is encouraging.

Although workers of state agricultural reclamation enterprises work like farmers year after year and month after month, raising cattle and milking the cows, when it comes to wages, they would eat "from the common pot." Therefore, the labor productivity rate has not been high, production has developed slowly, and there have been serious deficits. How can this situation be changed? Practice proves that establishing the joint production responsibility system, such as has been done in the farm villages, is the best way to stimulate the development of productivity.

Last year, the agricultural reclamation enterprises of the entire province implemented different forms of the production responsibility system, and after it was gradually popularized from the localities to large areas, profits increased drastically from 120,000 yuan in the previous year to 1.32 million yuan--a tenfold increase in 1 year. Of course, compared to the farm villages, agricultural reclamation enterprises have their own characteristics, and implementation of the production responsibility system should start from the actual situation. The production responsibility system now needs to be further strengthened and perfected. Leaders of the departments concerned must continue to liberate thought, improve understanding, and strengthen investigation and study so as to join the authority, duties, and benefits of the workers of the agricultural reclamation departments tightly together in order to manage the agricultural reclamation enterprises even better and to make greater contributions to the four modernizations.

9296
CSO: 4007/557

BRIEFS

ANJI COUNTY POULTRY--The number of domestic fowls raised by commune members in Anji County, Zhejiang Province, has increased to about 1.4 million, according to a recent investigation by the county's foodstuff department. Each household has an average of more than 20 fowls, an increase of 20 percent over that of last year. [OW091607 Hangzhou Zhejiang Provincial Service in Mandarin 1040 GMT 7 Sep 81]

CSO: 4007/579

POPULATION, INDUSTRIAL GROWTH REPORTED REDUCING ARABLE LAND

HK080220 Hong Kong SOUTH CHINA MORNING POST in English 8 Sep 81 p 6

[Article by Christopher Fleming]

[Text] Beijing, Sept 7--The unrelenting pressure of population growth and industrial expansion is taking a heavy toll on China's limited arable land.

However, the remedial program of waterland reclamation is also causing irreparable damage to the country's ecological system.

Recently, China's planners have been alarmed by the result of one survey which shows that the country's cultivated land area has not increased but in fact decreased over a 20-year period. In the same period, population soared from 640 million to 940 million.

In 1957, the country's cultivated land was about 107 million hectares. But in 1977, it had shrunk to 99 million hectares. It was tantamount to the disappearance of Sichuan, Guangdong and Guangxi provinces from China's agricultural map.

Actually, 28.68 million hectares of agricultural land were lost to city and industrial construction in that period, which means that the cultivated land of a province like Fu Jian vanished every year. But the reclamation of about 20 million hectares of deserts and wastelands substantially reduced the overall arable land loss.

At present, China is still faced with the mind-bogging task of safeguarding the food supply for its one billion population in the face of the continued shrinking of the country's arable land due to urban growth.

China is obliged to feed 22.7 percent of the world's population from its seven percent share of the world's total arable land area. The present annual grain production per capita of 316 kg is only slightly higher than the figure 25 years ago.

A massive reclamation program seems to be one important way out. Based on the survey of conditions in the 50's. There are still around 14 million hectares of wasteland available for reclamation. But this program would entail huge investments--which capital-deficient China can ill afford.

And more significantly, there are forbidding ecological laws which China's economic planners must contend with. Already, nature is returning in kind the massive damage inflicted on it by China's past reclamation projects.

This aspect of the problem is the focus of ongoing discussion among China's economic planners. Based on the views and facts revealed recently in economic journals. There is in fact a developing recognition that the large-scale reclamation projects, particularly in the northwestern border regions, have by and large neglected to consider the possible adverse impact on the country's ecosystem.

China's deserts and wastelands are concentrated in the six frontier provinces of Xinjiang, Qinghai, Ningxia, Inner Mongolia, Gansu and Xizang.

The reclamation projects conducted in these areas in the past three decades have indeed created new bases for agricultural and animal husbandry production. However, the massive tinkering with nature has also meant large-scale destruction of vegetation, widespread loss of soil fertility and secondary salinization of large tracts of land, expansion of deserts and disintegration of ecological balance.

Blind reclamation has meant more losses than gains. With large investments, Qitai County in Xinjiang, for example, has reclaimed more than 67,000 hectares from the Gobi Desert since 1949.

At present, however, only around 10,000 hectares remain under cultivation, the rest is again unfit for planting as the meagre fertility of the soil had been used up.

In Gansu, the Huahai state farm destroyed 1,500 hectares of grassland to expand its farming area. Result: Grain harvest was even less than 10 percent of the amount of seeds sown. In a 2-year period, its farmsite had to be transferred several times, using up more scarce capital funds and devastating more vegetation in the process.

The whole Qinghai Province has reclaimed 380,000 hectares of wasteland since 1949, but due to the rapid deterioration of the soil, 278,000 hectares are now useless for farming purposes.

In Xinjiang, more than 200 state farms were established on former wastelands and 40 new oases were created in addition to the old ones. This feat was much publicized before.

But actually, due to the leakage of many irrigation ditches, deficient sewage system and unrestrained pumping of water, the underground water level has steadily ascended resulting in the salinization of large tracts of land.

In Xinjiang, salinization has spread to 867,000 hectares, which is one-third of the total irrigated land area.

Reclamation has also meant the dispoliation of large forest areas and extinction of valuable species of trees. This in turn is causing unfavorable climatic changes. The Tarim basin originally had a poplar forest area of 528,000 hectares, but now only 230,000 hectares remain.

In 1949, Xinjiang had four million hectares of red willow forests, but half of that has already been cut down.

At the same time, there has been a marked reduction of water volumes in many rivers, the absolute highest temperatures have gone up while the absolute lowest temperatures have gone down, gales and rainstorms occur more frequently and springtime drought is more severe.

Profound ecological changes have also been wrought by the large-scale irrigation projects in reclaimed areas. In Xinjiang, 466 dams have been constructed since 1949, but as most of these are on the plains, salinization has occured on large tracts of surrounding farmland.

The construction of the Bahu Dam in Qitai County in 1961 has caused the steady rise of the water table. As a result, 1.4 million hectares of surrounding areas have been transformed into alkaline land.

The Manyinghu production brigade around the dam which used to supply grain to the state with its annual harvest of 450 tons, saw its grain output drop to 90 tons after the dam construction; its people now survive on the relief grain supplied by the state.

The construction of the Daxihaizi dam along the Tarim river channel resulted in the drying up of the whole Lop Nor Lake--3,006 sq km, in size. But the original aim of boosting agricultural production in the upstream region through increased irrigation has hardly materialized. Soil salinity due to higher water table has meant poor crop yield.

On the other hand the lower water table in downstream areas has spelt the ruin of large tracts of forests.

As a consequence of dam construction, the surface area of Fuhai Lake in northern Xinjiang has shrunk by 8,000 hectares, while the water table is sinking by 0.317 meters every year. For the same reason, the fresh-water Bositeng Lake is now slowly turning into a salt-water lake.

Another ironic result of the reclamation projects is the steady frightful expansion of deserts. Due to the devastation of vast expanses of vegetation, strong winds are becoming more frequent and sand dunes move more easily blocking roads and threatening whole villages.

The great Taklamakan desert is now moving southward at the rate of 1.3 metres every year. Another study has revealed that over the past three decades, 14,000 sq km of land have become new deserts in the Tarim basin area. In 1959, Qinghai Province only had 5.97 million hectares of deserts; now it has 7.9 million hectares, which means a growth of more than 85,000 hectares every year.

All the foregoing facts do not yet represent the whole story. Many examples remain to be cited, and further studies are going on. It's clear, however, that China's ecologists are finally having their say in long-range economic planning.

Expectedly, China's future reclamation program will be more closely guided by ecological science. Its pace and scale will most likely be no longer the same as before.

How China, with its shrinking agricultural land area, can guarantee the food supply of a large and ever-growing population becomes then a complicated question all the more.

CSO: 4020/246

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ORG: WANG Wenlong of Luoyang Tractor Research Institute; WANG Xiubin of Wuhan Institute of Technology; ZHOU of Hubei Machinery Research Institute; XIAO of Zhejiang Agricultural University

TITLE: "The Morphology Theory and Practice of Paddy Field Power Unit and Its Development"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 2, 1981 pp 1-10

TEXT OF ENGLISH ABSTRACT: What theory should be used to guide the development of the paddy field power unit (PFPU) is an important question which must be resolved if we are going to realize agricultural mechanization in paddy fields.

This paper shows that it is necessary to break away from conventional tractor theory and develop a new one based on the fact that natural, agricultural and socio-economic conditions introduce problems to Chinese farm mechanization. The theory of the "tractor morphology" written by the authors in 1973 is introduced simply. According to this theory the morphological requirements of the PFPU and the "floating-semifloating" working principle (simply called the "buoying

[Continuation of NONGYE JIXIE XUEBAO No 2, 1981 pp 1-10]

principle") are also presented. We have carried out a theoretical analysis for the results obtained from the performance and application tests of PFPU's. We have found the main reasons for the boat-type tractor based on the "buoying principle" having a higher plowing capacity, twice as much as that of the conventional paddy field tractor of the same power. At the end of the paper the choice of the PFPU models is discussed. It must be in accordance with both natural and economic considerations.

Through a preliminary statistical analysis of the effects of present boat-type tractors, we have concluded that the boat-type tractor, the boat-type combine and the combinatory tractor with floating boat, which are all based on the "buoying principle," may be the main developing direction of the PFPU in the future.

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TITLE: "Problems and Analyses of Design of Inner Cam Controlling Mechanism of Planting Crank for Rice Transplanter"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 2, 1981 pp 11-27

TEXT OF ENGLISH ABSTRACT: The inner cam controlling mechanism of the planting crank is a type of mechanism generally used on the current engine-driven rice transplanter in China.

This paper puts forward views and design methods for the following relevant problems, such as the creation of an inner cam controlling mechanism of the planting crank, methods for determining the basic parameters according to agrotechnical demands, the basis of gripper path analysis, the function of velocity coefficient K, as well as a definition of the position of the cam controlling condition and the instantaneous angular velocity of a gripper bar, etc.

The contents of the preliminary summary mentioned above are for reference only.

AUTHOR: LIN Lin [2651 7207]
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TITLE: "On the Best Fitting of the Plow Surface Shape"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 2, 1981 pp 28-35

TEXT OF ENGLISH ABSTRACT: This paper introduces a new method of generating the plow surface, the model curve description, and a behavior function of the plow surface. The best fitting of the plow surface shape can be done by solving a nonlinear programming equation which contains N variables and M inequalities. Using this, we have developed a mathematical model describing the plow surface shape for the best fitting. This method has been successfully used in the mathematical description of various plow bottom surfaces of the South China series of paddy field plows.

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TITLE: "A Practical Method of Computer-aided Design of Centrifugal Pump Impeller Based on the One-dimensional Flow Theory"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 2, 1981 pp 36-42

TEXT OF ENGLISH ABSTRACT: A simple mathematical treatment method is given in this article which enables the traditional centrifugal pump impeller, the design of which is based on the one-dimensional flow theory, to get a series of analytical expressions and some algorithmic properties. Thus the common work that used to be done manually can be transferred to a computer and can be performed by computer-aided design.

AUTHOR: PANG Shenghai [1690 5116 3189]

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TITLE: "Mathematical Analysis in the Design of the Flywheel-type Cutterhead"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 2, 1981 pp 43-51

TEXT OF ENGLISH ABSTRACT: The flywheel-type cutterhead is widely used in the ensilage harvester and crop chopper, the design of which is usually shown by illustration. In this article, a mathematical analysis design method is given. In this way, the choice of geometric factors of the cutterhead will be made more reasonably and the working properties of the cutterhead will be improved. In the paper, crop choppers ZC-6 and 9ZF-1.0 are taken as examples, and a specific method for improving the cutterhead design is given. According to the calculations, the power consumption can be decreased by 12~33 percent.

AUTHOR: ZHANG Boping [1728 3134 1456]

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TITLE: "Experiment and Research on Grinder Plate Type Seed Metering Mechanism"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 2, 1981 pp 52-61

TEXT OF ENGLISH ABSTRACT: The grinder plate type seed metering device is a new type of feeding device used for planting wheat, sorghum, rice, peas, beans, rape, millet and flaxseed with a better uniformity of seed distribution. The seed hopper used for the grinder plate type metering device can also be used for the edge-drop plate seed metering device for hill-drop or single feed of corn and the reverse-feed dropping mechanism for drilling undelinted cottonseed. This paper describes the structural parameters, technology of the metering process and technical characteristics of the grinder plate type seed metering device.

AUTHOR: CHENG Huaishi [4453 2037 6108]
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TITLE: "Telemetry of Piston Temperature in a Diesel Engine"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 2, 1981 pp 62-68

TEXT OF ENGLISH ABSTRACT: Telemetry of piston temperature is used for the study of piston heat load and is an important implement is finding the way to improve a diesel piston. Through progress in our electronic industries we are able to proceed in this field of research. In this article the fundamentals, instrumentation and operation of the piston temperature telemetry are presented.

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TITLE: "An Investigation of a Reel with Retracting Finger on Vertical Table"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 2, 1981 pp 69-77

TEXT OF ENGLISH ABSTRACT: A reel with retracting finger is being used as a conveying part of crops on the vertical table. Past designs had been based on experience. In this paper, the typical motion of the finger has been proposed. The changing regularity, dynamic character and working process of the finger have been studied based on derivation of the computation formulas of speed and length of finger extension. The theory and method for selecting speed, work section, and conveying ability, in addition to the choice of primary construction parameters, have been presented.

AUTHOR: JU Xiqing [7263 6932 1987]

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TITLE: "Analysis of Seed Spout of John Deere 7000 Precision Seeder"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 2, 1981 pp 78-82

TEXT OF ENGLISH ABSTRACT: In this paper, based on the data from actual measurement the equation of seed spout curve is obtained. The formula for seed moving velocity in the seed spout is also derived. Then the velocity V_K at the discharge end of the seed spout and the horizontal component V_{KS} of V_K are calculated. The optimum sowing speed of this type of seed spout has been verified, thus providing a reference for seed spout design.

9717
CSO: 4009/405

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TITLE: "Dry-Field Raising of Vigorous Rice Seedlings"

SOURCE: Beijing NONGYE KEJU TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 3, 1981 pp 1-2

ABSTRACT: Dry-field raising of rice seedlings was begun in Junan County, Shandong in 1965, and for the last 11 years more than 90 percent of all rice seedlings have been raised by this method. Although the seedlings produced in this way are shorter, there is much better root development, which makes for better growth after transplanting. The method saves large quantities of water, which is important in an area where soil moisture evaporation can exceed rainfall. The seedlings are easy to transplant if the soil is moistened around them, and the method is better suited to intercropping. The ground must be carefully prepared and specific fertilizer recommendations followed. Sowing is fairly sparse, ranging from 130 jin per mu down to 60 or 80 jin per mu.

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TITLE: "Rice Seedling Propagation by Strip Sowing in Holding Beds"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 3, 1981 pp 2-3

ABSTRACT: For the past 5 years, Wuxi Province has been disseminating a propagation method which improves land use efficiency and gives good yields. In this method, rice seedlings are sown at three times the normal density, and when the young seedlings have sprouted and have produced three leaves they are shoveled up and transplanted into three times the area in holding beds by cutting the mass of seedlings into strips 1 cun or less wide and planting these strips in rows with a spacing of 4-5 cun. In 1980 the method was used on 305,000 mu, or 59.6 percent of the early rice area. The method increases per-unit yield by about 10 percent, accelerated maturity, gives larger quantities of green manure, and decreases labor and expenses. It has been successfully used with seedlings raised in greenhouses.

AUTHORS: YANG Zhongliang [2799 1350 5328], HUANG Shuming [7806 2885 2494]

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TITLE: "Good Results From Use of Blue Plastic Mulch to Raisc Rice Seedlings"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 2, 1981 p 3

ABSTRACT: Tests of plastic films of various colors in mulching rice seedlings indicated that blue film was the best, followed by clear film, while orange and yellow films were not suitable. The blue and green light which the blue film passes encourages plant growth. The blue film also produces a greater temperature rise than the clear film. The seedlings grown with blue film had better quality and germination rates and better tillering and earing. The blue film gave yields 30-50 jin per mu greater than clear film. The blue film also proved to be less subject to aging than the clear film.

8480
CSO: 4009/329

AUTHOR: None

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TITLE: "Good Results from Addition of Fertilizer to Early Rice Seedlings When Transplanting"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 5, 17 May 81 p 5

ABSTRACT: In 1979 and 1980 the practice of directly fertilizing early rice seedlings when transplanting (either by direct introduction of fertilizer into the soil or by soaking the roots) was instituted in Hexiangqiao Commune; in 1980 the method was used on 9,070 mu, 73.5 percent of the total rice area, helping the plants to withstand cold, wet soil conditions. The treated plants turned green 3 to 7 days earlier and tillered 7 to 10 days earlier than the nontreated plants. The method uses less fertilizer and produces a larger effective earing rate, earlier ripening and higher yields (by 20-30 percent).

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ORG: Fangcheng County Scientific and Technical Committee, Henan Province

TITLE: "Use of Male Sterile Corn Variety to Expand Production of C704 Hybrid"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 5, 17 May 81 p 11

ABSTRACT: One of the main difficulties involved in producing hybrid corn is the complete detasseling of the maternal parent; because of insufficient manpower or poor-quality work, this is often done inadequately, resulting in an admixture of unwanted varieties in the resulting seed. Accordingly the production of the hybrid variety C704 (type C Xiangnong 704) was attempted by crossing male-sterile Cms Ernan 24 with restorer line 525. First, tests were made to assure that the C704 hybrid gave good yields. In one test, a yield of 1,168.7 jin per mu over a 15-mu area was obtained. Next it was necessary to assure that C Ernan 24 was sufficiently male-sterile. Tests in 1978 and 1979 indicated that the variety was 99.8 percent male sterile. Finally, tests were conducted to assure that the pollination and fruiting rates for C704 were satisfactory. In 1981 it is planned to expand the use of this variety to more than 100,000 mu, or 30 percent of the total corn area in Fangcheng County; it may account for 70 percent of seed corn land.

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TITLE: "Low-Temperature Storage of Wheat Pollen"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 5, 17 May 81 p 15

ABSTRACT: It was found that when collected at the proper time, wheat pollen could be stored in a refrigerator at 3-4° C in tap water. When used after 14 days it produced a hybrid fruiting rate of up to 80 percent. For relatively long storage, the water is changed once or twice. When the pollen is to be used, it is placed in a cool location for 10 to 20 minutes.

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ORG: Caiyang County Agricultural Bureau, Shandong Province

TITLE: "Interplanting of Soybeans in Barley Fields"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 5, 17 May 81 p 18

ABSTRACT: In 1980, soybeans were interplanted in 44,000 mu of barley fields in Caiyang Province, resulting in yield increases of about 100 jin per mu and leading to earlier ripening by half a month. The soybeans were planted down the centers of every other row; the barley rows were 6 cun apart and the spacing of the soybean rows was thus 1.2 chi. Hills were 6-8 cun apart with 2-3 plants per hill, and planting was done 10-15 days before the barley was to be harvested. Combined interplanting of soybeans and corn with barley was also successfully attempted. The possibility of earlier planting is a principal reason for the success of this method, since it allows the seed to germinate before a recurring rainy season which often reduced germination, and allows the use of varieties with a longer growing season, which produce higher yields.

END

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AGRICULTURE

No. 166

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CHINA REPORT

AGRICULTURE

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CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

'JINGJI GUANLI' Discusses Agricultural Reclamation
(Sun Panqi; JINGJI GUANLI, 15 Aug 81)..... 1

New Rice Varieties Described
(NONGYE KEJI TONGXUN, No 3, 1981)..... 8

New Sweet Potato Variety Developed
(Li Shanfa; NONGYE KEJ TONGXUN, No 3, 1981)..... 13

New Soybean Varieties Described
(NONGYE KEJI TONGXUN, No 3, 1981)..... 15

Huang He River Bed Becomes Fruit Center
(GUANGMING RIBAO, 10 Aug 81)..... 17

Plastic Film Used To Mulch Peanut Plants
(Zhang Xueli, Chen Qingnan; NONGYE KEJI TONGXUN, No 3, 1981).... 19

Anhui

Briefs
Wheat Harvest 22
Xiaoxian County Cotton Harvest 22

Fujian

Briefs
Sugarcane Production 23
Longxi Prefecture Fruits 23

Hebei

Briefs
Bumper Fishing Catch 24

Heilongjiang

Briefs
Cattle Raising 25

Hunan

Briefs
Antidrought Work 26

Jiangsu

Briefs
Huaiyin County Corn Harvest 27
Autumn Sowing Preparations 27

Jiangxi

Briefs
Xinfeng County Tobacco 28

Jilin

Briefs
Water Storage 29

Liaoning

Briefs
Gai County Cotton Harvest 30

Nei Monggol

Briefs
Agricultural Loans 31
Wool Procurement 31

Shandong

Superior Cotton Variety 'Bo Mian No 1' Bred
(DAZHONG RIBAO, 9 Aug 81)..... 32

Increased Grain, Cotton Yields in Linqing County Achieved
(DAZHONG RIBAO, 11 Aug 81)..... 33

Tianjin

Briefs

Water Supply Project 35

Zhejiang

Briefs

Forestry Conference 36

ABSTRACTS

BOTANY

ZHIWU XUEBAO [ACTA BOTANICA SINICA], No 4, Jul 81..... 37

ENTOMOLOGY

KUNCHONG XUEBAO [ACTA ENTOMOLOGICA SINICA], No 3, Aug 81..... 39

ZOOTAXONOMY

DONGWU FENLEI XUEBAO [ACTA ZOOTAXONOMICA SINICA], No 3, Jul 81..... 44

I. GENERAL INFORMATION

'JINGJI GUANLI' DISCUSSES AGRICULTURAL RECLAMATION

HK220619 Beijing JINGJI GUANLI in Chinese No 8, 15 Aug 81 pp 9-12

[Article by Sun Panqi [1327 3382 2759], Ministry of Agricultural Reclamation: "How Has the Agricultural Reclamation System Turned From Protracted Losses To Profits?"]

[Text] Our state farms were suffering from heavy losses for quite a long period in the past and particularly during the 10 years of interference and sabotage by the counterrevolutionary cliques of Lin Biao and the "gang of four." The losses during the 12 years from 1967 to 1978 were as much as 3.7 billion yuan. Calculated on the basis of the total staff of state farms across the country, there was an average of 740 yuan of losses made by some provincial farms equalled 150 percent of the annual wages of their staff. This situation is really staggering. Therefore following the downfall of the "gang of four," it became an urgent and important task for state farms to restore order and turn losses to profits and this job is in fact an important part of our economic readjustment.

The state council and the people's governments at various levels have paid much attention to the work of state farms and they stressed that these farms must be managed well so that they would be able to turn from losses to profits. In 1978, the state council held a national conference on the work of state farms to thoroughly settle accounts for the crimes committed by Lin Biao and the "gang of four" and make arrangements for rectifying state farms. Thanks to the measures taken to restore order, the production and construction of state farms were rehabilitated and developed quite rapidly while much improvement has been made in management.

Following the 3d plenary session of the 11th CCP Central Committee, our state farms deeply discussed the criterion for judging truth and have implemented the principle of "readjusting, reforming, rectifying and improving," spared no efforts in shifting their work to production and following economic laws and consequently they have made basic changes in management. The losses suffered by the state farms in 1978 dropped to 93 million yuan while in 1979 they made 520 million yuan profits. In 1980, many regions were hit by natural calamities and state farms had additional expenses of 630 million yuan on readjusting the wages of their staff and subsidies for nonstable foodstuffs, yet they still made 540 million yuan profits. The number of the enterprises of the state farms that made profits accounted for 60 percent.

How did the state farms turn from losses to profits in the past 3 years?

1. Strengthen Leadership, Correct Understanding

The state farm management departments at various levels and the farms themselves have regarded turning losses to profits as their major task and a key work of leadership is to repeatedly educate the broad masses of staff and workers so as to raise their understanding of the importance of turning losses to profits. Owing to the influence of "leftist" mistakes that existed for many years, a number of cadres in state farms had the thinking of "asking for refunds from higher authoities for what their farms spent and asking for subsidies for their losses" and consequently they did not care about and were indifferent to serious losses. Some others thought it was "difficult to run farms and turn losses to profits." The nature of these problems was that these cadres did not understand the purpose and tasks of running state farms. Thus without solving such problems in ideology and understanding it would be impossible for state farms to turn losses to profits. In line with our party's ideological line of seeking truth from facts and on the basis of the discussions of the criterion of truth and by proceeding from the reality of state farms, the following three points were defined to solve the ideological problems in turning losses to profits. First, the basic task of the state farms is to supply more and better agricultural and animal husbandry products and other products and provide as much profits as possible to the state and accumulate funds for socialist construction. With losses, the state farms have to rely on state subsidies and this means that instead of having their share in building socialism they are adding burdens to society. With this understanding, cadres have a definite understanding of the guiding ideology in the economic work of state farms and they began to care about economic effect. Thus with less blindness in production, these cadres became aware of turning losses to profits. Second, raise the understanding of socialist economic laws to gradually solve the shortcomings of the system and method of economic work. On the basis of summing up experience, measures should be taken to reform the rules and regulations that hinder the initiative of enterprises and staff and workers and the development of production, learn to use economic methods as the key and combine them with the necessary administrative interference as the method for farm management; overcome the management thinking of the distribution system and small peasant economy, strictly follow natural and economic laws and carry out the enterprises form of management in state farms.

Third, fully understand and tap the potential of farms, soil, machinery, man power, material power, financial power and natural resources, overcome shortcomings and display advantages. But to do this it is necessary first of all to emancipate the mind, break with old conventions and carry out work daringly. Under the premise of maintaining the system of ownership of the means of production and implementing the principle of distribution according to work, where it is feasible, various undertakings must be undertaken by farms, production teams or dependents of staff and workers' households according to specific conditions so as to expand production and open up more resources in a bid to reverse the situation of losses.

2. Readjust Economic Structure, Work Out Operational Policy According To Specific Conditions

Many state farms have a low production level with bad economic effect and consequently they have suffered losses; to a great extent, such a situation was caused by an irrational economic structure and improper management principles. Therefore various

state farms have gradually readjusted their economic structure and management in a planned way and in doing this they have in general followed the following principles. First, production and management are considered according to the needs of the state as well as the production and life of state farms. Seocnd, display the advantages of state farms according to their natural conditions, resources and socioeconomic conditions. Third, rationally arrange the proportions of the production of various trades according to the relations of interindependent and mutual promotion among agriculture, forestry, animal husbandry and diversified management. Fourth, combine the development of modern and big-scale agriculture with the development of labor intensive agriculture. Fifth, select the items of production on the basis of economic effect. Starting from their own specific conditions, various state farms comprehensively studied these principles and took initial readjustment measures with apparent achievements to promote production and increase income. The reclamation areas in Heilongjiang Province have fully displayed their advantages of a large acreage of cultivated land and high mechanization and they have readjusted the location of crops and concentrated their efforts in promoting the production of wheat and beans. Thanks to these efforts, they have drastically increased total and per unit area grain and bean output and drastically increased the amount of commodity grain that was handed over to the higher authorities. Per unit area grain and bean output increased from 202 jin in 1978 to 253 jin in 1980, an increase of 24 percent; total output increased by 37 percent from 4.9 billion jin to 6.74 billion jin while the amount of commodity grain handed over the higher authorities increased by 80 percent from 2.2 billion jin to 3.98 billion jin. The reclamation areas in Xinjiang displayed their advantages of good natural conditions and large population to combine modern and big-scale agriculture with labor intensive agriculture and under the premise that total grain output must constantly be increased and the task of handing over commodity grain to the higher authorities be fulfilled, they readjusted the structure of their crops and actively promoted the development of industrial crops that bring big economic achievements and that require more labor. Total grain output in 1980 was 1.8 billion jin and the amount of grain handed over to the higher authorities was 400 million jin, 7 percent more than 1979. The acreage for growing cotton was expanded by 200,000 mu, totaling almost 1 million mu. Total output of sugarbeet was 299,300 tons and of hops was 1,640 tons, increases of 28 and 50 percent respectively over the figures for 1979. The Wulagai region of inner Mongolia has water and grass resources that are suitable for developing animal husbandry. According to the principle of overcoming shortcomings and displaying advantages, the four state farms in this region shifted their production from agriculture as the main stay to focus on animal husbandry and farmlands were turned to developing animal husbandry. At the same time, measures were also taken to improve grasslands and protect and increase animals. These farms have consequently developed animal husbandry quite rapidly. The rate of increase of animals in 1980 was 17 percent higher than the previous year and the qualified rate of meat animals increased by 34 percent. Some farms in the northwest and north have planted sunflowers, rapeseeds and hemp by making use of poor and alkaline-saline soil that is unsuitable for growing grain. Some farms in the south have grown tea and oranges in hilly regions. The rubber plantations in Guangdong and Guangxi that were damaged by typhoons and cold spells have been replaced by planting tea and sisal hemp so as to improve the economic effect.

In readjusting the structure of agricultural products, the state farms and their management departments also paid attention to readjusting their industry so as to shift

the main task of readjusting their industry so as to shift the main task of industry from machinery processing to focus on processing agricultural and sideline products. These state farms have also developed the light and textile industries quite rapidly.

The industry in reclamation areas across the country produced 165,000 tons of sugar in 1980, an increase of 41 percent over the previous year; it turned out 100,000 tons of paper, an increase of 20 percent while the output of fiber plates increased by 100 percent. In addition, some enterprises that were operating below capacity or suffered losses were either shifted to other modes of production, closed down or suspended. Statistics showed that 120 enterprises of the reclamation areas in 8 provinces and autonomous regions in Heilongjiang, Hebei, Liaoning, Shaanxi, Xinjiang, Jilin, Jiangsu and Hubei have been closed, suspended, merged or shifted to other production. The reclamation areas in Heilongjiang province were able to decrease losses by over 3 million yuan by closing and suspending 13 enterprises. Thanks to readjustment work, the industry of the reclamation areas throughout the country turned out products with a gross output value of as much as 4 billion yuan; 22 percent higher than the 3.2 billion yuan of 1978.

3. Reform Management System, Implement Production Responsibility System

The state farms are agricultural enterprises under the socialist system of ownership by the whole people, but because of the shortcomings in the management system, the state was in a position for a long period to "monopolize the revenues and expenses" of such farms. All the farms were "eating out of a big pot." Such a situation consequently seriously affected the enthusiasm of these farms and their staff and workers. Starting in 1979, the state implemented the method of placing financial quotas on state farms while the farms introduced the "three quotas and one award" system for production teams. These two reform measures are of basic significance to the management of state farms.

From 1979 to 1985 [as published], the state has begun to implement independent accounting and responsibility for one's own profits and losses for the enterprises in the reclamation areas. In this aspect, the following different methods are used according to the specific conditions of enterprises:

1. The method of "independent accounting, responsibility for one's own profits and losses, retention of profits and no subsidies for losses" has in general been introduced in state farms and their industrial and commercial enterprises.

2. The method of "fixing quotas to be handed over to the higher authorities, fixing quotas once every year, retention of profits and no subsidies for losses" has been introduced in the industrial and supply and marketing enterprises that belong to rubber plantations and the departments of reclamation areas at various levels and to the few state farms that are making big profits.

3. Consideration is given for 1 to 2 years to the few state farms with bad natural conditions and temporary losses. Such farms are implementing the method of "fixing quotas with subsidies once every year, retention for profits and no subsidies for losses."

With the introduction of fixing financial quotas in state farms, the enterprises have expanded their autonomy and increased their responsibility while their initiative has been mobilized. As a result, these enterprises are in a position to use their own profits for expanding reproduction and they have achieved a better economic effect. The Hebei provincial farm is the earliest to implement the method of fixing financial quotas and from 1974 to 1978 it made 66 million yuan of profits that were used in improving production conditions and expanding reproduction. This farm has consequently been able to increase its income by a big margin. In the successive 2 years from 1979 to 1980, it made more than 30 million yuan of profits.

State farms introduced the "three fixed quotas and one award" system among production teams, that is fixed output value, fixed production costs and fixed profits, and award for overfulfillment of planned profits. Some other state farms have introduced "four fixed quotas" or "five fixed quotas" but they all have similar contents. The profits made after meeting the plan are in general distributed in the proportion of "4, 2 and 4" and this means that 40 percent are for state farms, 20 percent for the retention of production teams and 40 percent for staff and workers' awards. Other proportions are "3, 2 and 5" and "5, 1 and 4," depending on the amount of output value and profits. The production teams themselves are in general implementing the production responsibility system of "division of labor according to specialization, accounting by each trade, assigning responsibility to groups, individual responsibility, fixed quotas with work points, payments according to work points, awards for overfulfillment of output quotas and punishment for underfulfillment of output quotas." With this system, each is able to do the work according to his ability and is responsible for his work. As a result, labor efficiency and the quality of work have been improved considerably with apparent improvement in management. The method of fixing output quotas for individual households and individuals and linking remuneration to output has been used with regard to a few production items that are suitable for handicraft work.

With the introduction of the production responsibility system, the enterprises are able to combine the achievements of their management with the economic interests of their staff and workers to change the method of "eating out of a big pot," mobilize the enthusiasm of staff and workers and promote production. The Hongxinglong Administrative Bureau of the Heilongjiang reclamation areas which has implemented the production responsibility system most effectively produced a total of over 1.6 billion jin of grain and beans in 1980, with an average of 28,000 jin per agricultural worker; the amount of commodity grain handed over to the higher authorities was over 1 billion jin. The 12 farms under this bureau made more than 1 billion yuan of profits. The agricultural reclamation system of Jiangsu province implemented the responsibility system of linking remuneration with output in 1979 and as a result, the agricultural enterprises made 11 million yuan of profits in the same year while in the previous year they lost 12 million yuan. The staff and workers said: "In the past, cadres shouldered heavy responsibility is being shouldered by the masses." Thanks to the introduction of the system, the Jiangsu profincial reclamation areas have been able to considerably improve labor productivity.

4. Develop Economic Integration, Carry Out Comprehensive Operation of Agriculture, Industry and Commerce

The correct orientation for the development of our modernized agriculture is to develop agricultural-industrial-commercial integrated enterprises because they

represent the trend of economic development. Because of our backward commodity economy, low level of socialization in production and the influence of the thinking of the natural economy, our state farms purely developed agriculture for a long period in the past and neglected comprehensive operation, all-round development in linking production, supply and marketing and in linking agriculture, industry and commerce. For quite a long period, they were just supplying raw materials and they did not carry out any processing let alone operate any commerce. Such a situation was in fact one of the reasons that caused the enterprises in the reclamation areas to develop slowly and surely for a long period.

In 1978, some state farms began to trial-run agricultural-industrial-commercial joint enterprises that have now developed considerably. Now there are 194 units trial-point units running such enterprises and the number of farms participating in such trial points is 570, 28 percent of the total enterprises in reclamation areas. Agricultural reclamation agricultural-industrial-commercial joint enterprises have already broken with the demarcation between regions, departments, trades and system of ownership to form a wide economic union. Based on agriculture and animal husbandry, such integration is centered on processing agricultural and sideline products and by adopting commerce as the means for circulation, they carry out comprehensive operation of agriculture, industry and commerce and streamline production, processing and marketing into a coordinated process. Thus having mobilized the initiative of agriculture, industry and commerce and the economic advantages of such integration, these farms have been able to develop production and increase income and profits. The Changjiang joint enterprise in Chongqing made 40,000 yuan of profits in 1978 and 2.5 million yuan in 1980. The Changcheng agricultural-industrial-commercial joint enterprise in Beijing made 20 million yuan of profits in 1979 and 30 million yuan in 1980, 100 to 200 percent higher than the profits made before 1978. Thanks to these achievements, this integrated body has been able to turn the losses suffered for 10 years or more in agriculture and animal husbandry (in 1978 alone, the losses were 2.36 million yuan) to 4.46 million yuan of profits in 1979.

5. Rectify Farms, Raise Management Level

The standard of management is vital in running state farms. Without scientific management, enterprises will not be able to fully display the conditions in production and technology. To improve management and production technology are two indispensable factors for developing farm productivity. Taken from the view point of the whole agricultural reclamation system, the management of state farms is low, coupled with bad economic effect. Therefore measures were taken over the past 3 to 4 years to completely rectify the state farms in a planned and gradual manner. The recertification consists of the following:

/First, rectify leadership element./ The key work in this aspect is to rectify ideology. Cadres of the farms and production teams are organized to conscientiously study and implement the party's principles and policies, further overcome "leftist" ideological influence and emancipate the mind. As a result, the remnants of feudal ideology such as factionalism and "one person alone has the say" have been basically eradicated and various unhealthy tendencies have been corrected. While rectifying ideology, measures were also taken to rectify and restructure organizations, transfer incompetent cadres from the leadership elements and promote to leading positions the young cadres and technicians with high ideological consciousness, specialized knowledge and who are full of enthusiasm. In some farms, cadres

for production teams were democratically elected and they have made achievements in their work. These measures are in fact an organizational guarantee for turning losses to profits.

/Second, strengthen the building of the ranks of staff and workers./ Most state farms have been able to establish good order in both production and life through active ideological and political education, education on observing laws, commending good people and deeds and correcting anarchism and evil tendencies. At the same time, measures have also been taken to train staff and workers. In 1980, the state farms across the country trained more than 320,000 cadres and workers through various forms to help them raise their political and ideological level as well as management and technological level.

/Third, rectify the management of enterprises./ According to the need to run management like enterprises, measures have been taken to readjust the management system of state farms. As a result, the structure of the farms that was based on the structure of military organization has been changed, unnecessary subdivisions of farms have been abolished while some production teams with too small a production scale that did not facilitate management have been merged. The number of nonproductive staff has been sliced from over 20 percent of the total staff to 17 to 18 percent and 12 percent in a few farms. The management system for planning, labor, finance, goods and materials, products and technology has been established and perfected. Measures have also been taken to strengthen economic accounting and cost management, improve labor productivity and the commodity rate and lower production costs. The Xinhua farm of Heilongjiang province was a longstanding and difficult unit that suffered losses for many years. In 1980, it carried out wholesale rectification and consequently it has been able to free itself from losses in 1 year. In 1979 it suffered 6.48 million yuan of losses but in 1980 it made 1 million yuan of profits. The Linghai farm of Jiangsu province is located in the coastal areas of the east China Sea. With its alkaline soil, its management system constantly changed, and ineffective operation, this farm suffered losses for successive years. It suffered 22.64 million yuan of losses in 20 years while in a certain year the losses were as high as 1.62 million yuan. After 2 years of rectification, it turned losses to profits. In 1980 it made over 110,000 yuan of profits and it became the first farm in the provincial agricultural reclamation system to get rid of the biggest losses.

The above-mentioned five measures are the common and basic measures taken by the departments of reclamation areas in their efforts to turn losses to profits. But it must be pointed out that it is also a very important factor for turning losses to profits that the state must support agriculture, particularly in readjusting the prices of agricultural products, so that agricultural reclamation enterprises will be able to increase their income.

Taken as a whole, the state farms have, over the past 3 years, turned losses to profits. But the present management of these farms leaves plenty of room for improvement. Their profit rate is still low and 40 percent of the enterprises are still suffering from losses. Thus it remains an urgent task for these farms to turn losses to profits. This problem was discussed as a key question at a national conference of directors of agricultural reclamation bureaus that was convened in April this year. The conference decided that agricultural reclamation enterprises must basically get rid of losses in the next 1 to 2 years and increase profits considerably so as to make a positive contribution to the country's modernization program.

CSO: 4007/593

NEW RICE VARIETIES DESCRIBED

Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 3, 1981 pp 6-7

[Article: "Rice Varieties"]

[Text] Variety 74-02

Variety 74-02 is an intermediate-maturing intermediate geng [Japonica] rice variety which we bred in 1973 by sexual hydridization using Chengduai No 8 as the maternal parent and Xin Liang No 7 as the paternal variety. The yield is generally about 900 jin per mu and may range as high as 1,200 jin per mu. In 1977-1979 it was included in the single-crop intermediate geng variety regional test plantings in Jiangsu Province. It had the top output in each of the 3 years, with average yields of 968.4, 897.5 and 997.7 jin per mu, which were higher by 25.2, 9.6 and 20.9 percent respectively than the control variety, Nongken 57, and also matured 13-15 days earlier. In this institute's high-yield experimental fields, the yield exceeded 1,200 jin per mu in 1977-1979. In 1980 it produced a yield of 1,220.7 jin per mu in a 100 mu replicated [lian pian 6647 3651] high-yield cultivation in Guhetao Brigade, Ganma Commune in this country, which was organized by the provincial, prefectural and county scientific and technical committees; an average yield of 1,384.4 jin per mu was achieved in an area of more than 23 mu. In 1979 and 1980 it was planted on more than 100,000 mu on this county, accounting for more than a quarter of the total rice acreage. It has already been introduced in experimental plantings in Shandong, Anhui, Hunan, Hubei, Sichuan, Shanxi and Fujian and Guangdong Provinces. According to incomplete statistics, the area planted to this variety exceeds 500,000 mu.

Characteristics. The plant is about 103 cm tall and has a growth period of 135-140 days. The plant grows densely, with thick, vigorous, upright stalks. It has a leaf age of 14; the leaves are thick, broad, short and deep in color; the flag leaves are 25-30 cm long and 1.6-1.8 cm wide. Tillering is relatively weak, but the heading rate is high. The panicles are about 17 cm long, and each panicle has a total of 120-160 grains and 100-130 full grains. The hulls are brownish yellow and the apicules are purplish red, with some short purple awns. The weight per thousand grains is 25-28 grams, the husked rice yield rate is over 80 percent, and the rice quality is medium.

Important points in cultivation. (1) Growing vigorous seedlings. The seed should be sown in the first 10 days of May at the rate of 80 jin per mu of seedling bed, producing vigorous 35-day seedlings. (2) Rational planting density. Transplant

in about the middle 10 days of June, generally with a spacing of 6 x 3 cun, with 33,000 bunches of 4-5 seedlings each per mu, resulting in a base figure of 150,000 seedlings per mu which produce over 200,000 panicles. (3) Scientific fertilization. Yields of 1,000 jin per mu require over 25 jin of nitrogen, while yields of over 1,200 jin per mu require 30-35 jin of nitrogen. The fertilization application approach should be: "Sufficient base fertilizer, rapid surface fertilization, sufficient dressing in the early stage, controlled dressing in the middle stage, correctly-chosen dressing in the late stage." The fertilizer application per mu should be 5,000-8,000 jin of barnyard manure, 50 jin of ammonium bicarbonate, 30 jin of potassium chloride and 50 jin of calcium superphosphate as base fertilizer, 20 jin of ammonium bicarbonate as surface fertilizer, 30 jin of ammonium bicarbonate fertilizer as a dress 7 days after transplanting, and 20 jin of ammonium sulfate 20 days before earing. (4) Water management. The plants should be irrigated with a cun of water in the regreening stage and shallowly irrigated thereafter, followed by an alternation of dry and moist with absolutely no deep-water irrigation. In the middle stages the fields are baked, and in the late stage they are watered intermittently. They must not lack water during the 10 days after full heading, after which periods of dryness and moisture may alternate, with moistness predominating, allowing the plants to reach maturity. (5) Timely pest control measures should be taken.

The price of the seeds is 0.17 yuan per jin. National universal grain coupons will be accepted for 0.7 jin. There is no limit on quantities. Packaging and postal charges are computed in terms of the quality of seed and the distance shipped.

(by Wang Muqing [3769 3092 3237], Ganyu County Institute of Agricultural Science, Jiangsu Province)

Hong'ai No 1 (Late-Maturing Xian Variety)

Hong'ai No 1 is a superior late-maturing xian [Indica] variety of rice which the Chengmen Commune Superior Varieties Station, Fuzhou City, bred from the red late-maturing [Hong wan] system. In 1976 this station imported a small quantity of seeds from Hainan Island for test planning, achieving excellent results. That winter, accelerated propagation of 3 jin of seed was carried out on Hainan Island, yielding 820 jin of seed. In 1977 the seed was distributed among the Chengguan, Xikou Qucun and other brigades for test planting, and the response was excellent. In 1980, about 30,000 mu of land in the county was planted to this variety. In 1978 our station raised a single late crop on 5.21 mu and obtained 2,970 jin of dried grain, an average yield of 570 jin per mu, which was more than 100 jin per mu higher than for Siyou No 2 in similar mountainous ridged-field conditions. Yields of over 700 jin per mu were obtained in late double cropping culture.

Characteristics. In single-crop late cultivation the total growth period is about 150 days; in double-crop late cultivation it is about 125 days. The plants grow 70-75 cm tall. The leaves are small, narrow, short and erect; the plants grow fairly dense and have thin, pliable, tough stalks. There is intensive tillering and the earing rate is high, with a fruiting rate of over 80 percent and a weight of 24-25 grams per thousand grains. The rice yield is over 70 percent and the quality is good. It is fertilizer-tolerant and disease-resistant, with broad adaptability. The seedling age [for transplanting] is flexible. It has rather good cold resistance in the late stage.

Important points for cultivation. Sow sparsely for vigorous seedlings. For single late crop cultivation, the seed should be sown during the Grain Rains solar period, while for late-season double cropping it should be sown in the middle 10 days of June. About 150 jin should be sown for each mu of seedling bed, and the seedlings should be transplanted at 35-40 days. The planting density should be 6 x 4 cun or at most 6 x 5 cun, and 8 plants should be planted in each bunch, giving a base figure of about 200,000 plants per mu. An adequate amount of base fertilizer should be given, generally amounting to about 70 percent of the total quantity of fertilizer applied. In the early stage a good tillering fertilizer should be given, and a properly chosen amount of late-stage dressing should be applied. Early fertilizing should be heavy but not excessive supplementary fertilization should be carried out in the middle stage to produce vigorous shoots, and a late dressing to increase grain weight should be applied in the late stage. The water level should be shallow in the early stage and the fields drained in the middles stages, and the ground should be kept moist in the late stage; after the milky stage the plants should not be heavily irrigated, in order to prevent node rot and disease, which would decrease output.

The price of the seed is 0.15 yuan per jin. National universal grain coupons will be accepted for 0.7 jin. There is no limit on quantities. Packaging and postal charges are set in terms of quanity and distance.

(By Yu Qiaohao [0151 0829 3185] and Li Ruifang [2621 3843 5364], Jianning County Superior Varieties Station, Fujian Province)

Zhongzuo 75 (Xian-Geng Cross)

Zhongzuo 75 is a new variety which we bred by indirect crossing of the xian and geng inferior species. The early-maturing, large-grained variety Hejiang No 8 from the northeast was used as the female parent, and was crossed with the early-maturing, high-yielding, disease-resistant Guangdong xian [Indica] variety Yiqing No 8 as the paternal strain; then, in order to overcome problems such as excessively low fertility and excessive segregation of inferior species among the hybrids, we also used the fertilizer-tolerant, lodge-resistant, medium late-maturing Beijing-grown geng [Japonica] variety Beijing No 9 as the female parent in a cross with the later generations of the Xian-geng cross, developing the variety by repeated selection. As a result, it has from its parents the characteristics of short stalks, large grains, large panicles, disease and lodging resistance, and good growth habits. In 1979 a small-area experimental planting in our institute yielded 1,024 jin per mu, 14 percent higher than the control variety, Zhongdan No 2. In 1980 this institute made a demonstration planting of 0.66 mu, obtaining a yield of 1,179 jin per mu. The variety produced the top yield in comparisons of intermediate-maturing varieties, with a small-area yield of 1,300 jin per mu, 20 percent higher than for Jiangyuan No 1 and 4.4 percent higher than for Zhongdan No 2. A planting of 120 mu was made at Gangfu Farm in Jiangsu; a 1-mu demonstration field in single-crop cultivation yielded 1,074 jin. The Jicheng Commune scientific and technical station, Zhengzhou City, Henan, obtained a yield of 1,063.8 jin per mu in a barley-rice rotation.

Characteristics. This is an intermediate-maturing variety whose total growth period is about 150 days in Beijing, 129 days in a barley-rice rotation in Donghai County, Jiangsu, and 121 days in a barley-rice rotation in the Zhengzhou suburbs. The plants are about a meter tall, with a panicle length of 20-30 cm, the grains are somewhat

sparse in the panicle, with an average of 120-130 grains per panicle, and the fruiting rate is 94-96 percent, with a weight of 29-30 grams per 1,000 grains. The grain hangs below the leaves [ye xia he 0673 0007 4421]. It has an erect flag leaf and when mature it has a green stalk and yellow panicles. The stalk is short and vigorous, fertilizer-tolerant and highly lodge-resistant. The grains do not easily shatter, there is no sprouting in the panicle, the husked rice yield rate is 80.5 percent, and the rice is of grade 1. It is highly resistant to rice blast, relatively resistant to bacterial leaf-blight, and resistant to sheath and culm blight.

Cultivation points. In the Beijing-Tianjin area it can be planted as a spring intermediate-maturing variety or rotated with rape or barley. It is generally sown in late April or the first 10 days of May, the seedlings are transplanted in the first or second 10 days of June, and it ripens before the end of September. The best base number is 80,000-100,000 plants per mu, with 200,000-250,000 panicles per mu. This variety has thick, vigorous stalks, and after transplanting, damage by snout moth larvae must be prevented and controlled. Suitable fertilization and water management must be practiced, and baking of the fields in the middle stage should be mild to avoid decreasing the effective number of panicles or producing panicle degeneration. In the late stage, watering should not be stopped too early, so as to avoid early dying back.

The seed price is 0.2 yuan per jin. National universal grain coupons will be accepted for 0.8 jin. The packaging and postage charge is 1 yuan and the quantity is limited to 2 jin.

(By Xing Zuyi [6717 4371 7328], He Jiaqi [0149 1367 7841] and Wang Shumin [3769 3219 2404], Paddy Rice Breeding Laboratory, China Academy of Agricultural Sciences)

Guangfushu (Glutinous Rice)

In the early planting season of 1978 we subjected Zhejiang glutinous rice to 50 kiloroentgens of colbalt-60 gamma radiation and irradiated it for 2 seconds with a CO_2 laser (the cobalt source dose rate was 200 roentgens per minute and the CO_2 laser energy density was 254.65 joules/cm^2), after which selection was carried out. In 1979 this variety was discussed at a joint meeting of the municipal laser plant breeding cooperative group and the municipal hybrid rice cooperative group and was given the name Guangfushu. In 1980, early and late season experimental and demonstration plantings amounting to 1,000 mu were made in several communes in Minhou County in the suburbs of the city [Fuzhou] and in Lianjiang and Zhonghe Counties; these generally produced yields of about 800 jin per mu. Both early-season and late-season crops are possible; in our institute's demonstration plot of somewhat more than 1.2 mu, early crops gave an average of 890.2 jin per mu, and late crops gave an average of 995.5 jin per mu.

Characteristics. When grown as an early-season crop on the Fujian plain, the total growth period is 108 days, while when grown as a late crop the period is 120 days. The plants are 81-90 cm tall and are fairly dense, with strong tillering. The leaves are light green and the flag leaves are 20.1 cm long and 1.05 cm wide. The panicles are 17.1 to 19.2 cm long. The effective number of panicles is 305,000-352,000, with 50-60 grains per panicle and a fruiting rate of about 85 percent. The weight of a thousand grains is 31.5 grams for the early crop and 32.4 grams for the late crop. The grains have little tendency to shatter. The variety is fertilizer-tolerant and relatively cold-resistant. There is a good late-period color change. The rice quality is medium.

Cultivation points. For an early-season crop, the seed should be sown in the middle or last 10 days of March; as a first crop on a hybrid-rice seedling bed or seed plot the sowing should be advanced to 10 March and the plants covered with plastic film. The seedlings are moistened and lifted with shovels for transplanting. About 500-600 jin of seed should be sown per mu of seedling bed and the seedlings raised until they are vigorous and have started tillering. As a late-season crop in the Fuzhou plain it is seeded before 20 July. The spacing for transplanting should be 6 x 4 or 5 x 5 cun, with 10-12 plants in a cluster. Because of the long growth season, adequate base fertilizer should be applied, followed by a fast-acting dressing to encourage early tillering and to obtain many large panicles. In most fields of communes and brigades which are located on plains, provided that sufficient base number of plants is transplanted and 15-20 jin of nitrogen is applied per mu, together with a suitable quantity of phosphorus and potassium fertilizers, a yield as high as 900 jin per mu can be expected. Before the young tillers separate, daojiaoqing should be used once to prevent sheath and culm blight.

Quantities are limited to 3 jin. The price is 0.5 yuan per jin and grain coupons are not accepted. Packaging and postal charge is 3 yuan (1.5 yuan for wooden box and postage, total cost per crate 3.5 yuan).

(By Weng Fulin [5040 4395 3829], Fuzhou City Institute of Agricultural Science)

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CSO: 4007/460

NEW SWEET POTATO VARIETY DEVELOPED

Beijing NONGYE KEJ TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 3, 1981 p 7

[Article by Li Shanfa [2621 6365 4099], Guangdong Province Agricultural Bureau: "Chaoshu No 1, a High-Yield Sweet Potato Variety"]

[Text] Zhaoshu (Zhaoci) No 1 is a high-yielding sweet potato (Fanci) variety whose breeding was completed in 1976 following a cross of Qingxin Shalaye and Puci No 6 by the Chaoyang County Institute of Agricultural Sciences, Guangdong in 1973. In 1977 the Chaoyang County Institute of Agricultural Sciences planted 1.2 mu with this variety and achieved a yield of 11,826 jin per mu. Xikou Brigade, Xichang Commune, Jieyang County planted 36 mu to this variety and achieved a yield of 12,323 jin per mu, while a yield of 18,200 jin per mu was achieved in a 1.03-mu area, setting a record for sweet potato yields in Guangdong Province. In 1979 the variety was planted in Xingning, Wuhua and Fengshun counties, all of which achieved yields over 10,000 jin per mu over large areas. In 1980 about a million mu was planted to the variety.

The characteristics which produce the large yields of Zhaoci No 1 are that the above-ground part grows rapidly in the early stage, elongates steadily in the middle period and does not die back quickly in the late period. The sweet potatoes are formed rather early underground, grow rapidly in the middle period and last well in the late stage. Increased yields are realized in both spring and summer plantings. The apical and other leaves are green, the leaves are heart-shaped, and the stalks are green with a slight purplish tint and are short, recumbent and highly branched; the sweet potatoes are spindle-shaped with yellow skin and pale yellow flesh, with purple streaks. The sweet potatoes tubers are produced in clusters and are all of normal shape. Most plants produce 4-5 sweet potatoes, but some produce as many as 13-14; the drying rate is 20-21 percent and the flour yield is 10-11 percent. The water content is relatively high, but the taste is rather sweet. This variety is not drought-resistant, and accordingly it must be given adequate moisture during transplanting; if the sunlight is intense after transplanting the plants must be watered once a day for 5-6 days until they are established. They are highly adaptable and not selective with regard to soil. But their cold resistance is only moderate.

Cultivation points. (1) Producing vigorous seedlings. Sweet potatoes with blunt ends which are free of disease or insect damage and weighing at least a half jin are selected for propagation and the seedlings are raised in early spring until vigorous. (2) Removing the apex [Xin 1800] when setting out. Healthy tou duan [2435 3008] seedlings with many nodes and with 3 or 5 leaves are selected, and the

apex is removed when transplanting in order to concentrate nutrients and produce early, rapid growth and sweet potato production. After transplanting the plants are covered with a thin layer of rice straw to keep off the sun and are watered. (3) Sufficient base fertilizer and several applications of dressing. Some 20-30 dan per mu of local mixed fertilizer and 100-200 jin of wood and straw ash are applied as base fertilizer. About 15 days after transplanting a light dressing is applied, and 30-40 days after planting, when the vines and leaves are growing vigorously and the potatoes are index finger size, they are given a heavy fertilization so as to accelerate growth of the sweet potatoes. Thereafter one or two more applications of fertilizer are given, depending on leaf color, to prevent leaf drop and early dying back. (4) Water management. After the irrigation ditch is dug the most impportant thing is to give the plants light watering to establish them, keeping them moist so that the roots and vines can grow, withholding water when the sweet potatoes are forming and keeping the plants moist when they are enlarging.

The price of seed sweet potatoes is 0.08 yuan per jin. A national universal grain coupon will be accepted for one jin out of five. There is no limit on quantities. The potatoes may be ordered directly from the Chaoyang County Institute of Agricultural Sciences, Guangdong Province.

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NEW SOYBEAN VARIETIES DESCRIBED

Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 3, 1981 p 9

[Article by Soybean Group, Changchun City Institute of Agricultural Sciences, Jilin Province: "Soybean Varieties"]

[Text] Changnong No 1

Changnong No 1 was developed by our institute in 1973 by a sexual cross of Jiunong No 1 as the maternal parent and Dongnong 33 as the paternal parent. In 1977-1979 it was included in province-wide regional tests. It gave an average yield 13.1 percent higher than the control variety in 37 different locations. In March 1980 this province's variety evaluation committee named it Changnong No 1; it also won an award for scientific and technical achievement from the provincial agricultural office.

This variety is an indeterminate-podding type. The plant is 75-80 cm tall with a strong stalk and with limited branching. It has sharply-pointed leaves and purple flowers and is covered with grapy pubescence. Most pods have 3 or 4 beans, of large size (22-25 g per hundred, with a light yellow color and of uniform size. The growth period is 125-130 days and the effective cumulative temperature is 2,000° C. It is not harmed by septorial brown spot of soybeans and is highly adaptable. The fat content is 19 percent and the protein content is as high as 43.8 percent, making it a relatively high-protein variety.

Given sufficient water and fertilizer, the proper density is 12,000 plants per mu and the yield may reach 400 jin per mu; in medium water and fertilizer conditions, each mu should be planted with 14,000 plants and the yield can surpass 300 jin per mu.

The price per jin of seed is 0.43 yuan and grain coupons will be accepted for 1 jin. Packaging and postage are extra, and the supply is limited to 2-5 jin.

Changnong No 2

Changnong No 2 is a hybrid developed by our institute in 1971 using Jiunong No 2 as the maternal parent and Jilin No 3 as the paternal parent. In 1974-1976 we carried out comparison tests within and outside of the institute. In 1977-1979 the variety was included in province-wide regional tests; in tests in 36 different

locations it gave yields averaging 12.8 percent higher than the controls. In interplanting conditions, the increase in yield is even greater. When soybeans and corn are interplanted in a 2 : 2 ratio, the yield can be increased by 15-20 percent or even more. Changnong No 2 is a high-quality variety with a protein content of 40 percent and a fat content of 20 percent. In March 1980 it was approved by the Jilin Provincial Variety Evaluation Committee, and it won an award for scientific and technical achievement from the provincial agricultural office.

This variety is a semi-indeterminate-podding type. The beans are of medium size (20-22 grams per hundred) and are a lustrous bright yellow. The plant has round leaves, white flowers and gray pubescence and most pods have 2 or 3 beans. The growth period is 125-130 days. It is free of septorial brown spot of soybean and resistant to disease and insects, and is widely adaptable. The stalks are strong, the pods densely culustered and the individual plant productivity is high, with steady high yields.

With large amounts of water and fertilizer, the best density is 12,000 plants per mu and the yield may reach 350-400 jin per mu; with moderate fertility conditions the best density is 15,000 plants per mu and yields may reach 300-350 jin per mu.

Supply conditions are the same as for Changnong No 1.

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CSO: 4007/460

HUANG HE RIVER BED BECOMES FRUIT CENTER

Beijing GUANGMING RIBAO in Chinese 10 Aug 81 p 1

[Article: "Scientific Research Produces Results; Desert Becomes a Fruit Garden; Ancient Waterways of the Huang He Have Become Our Nation's Important Fruit Base"]

[Text] GUANGMING RIBAO Reporter Li Linhe [2621 2651 3109] reports: Recently, this reporter visited the ancient waterways of the Huang He. The former places covered by sandstorms and wild grasses have now become our nation's large fruit producing bases. The responsible comrade of the Zhengzhou Fruit Trees Institute of the Chinese Academy of Agricultural Sciences told this reporter, the ancient waterways of the Huang He were zoned as our nation's fruit producing region at the end of the 1950's. The whole region was 15 million mu of desert. Now over 2.5 million my have been planted with such fruit trees as apples. The annual yield of fruits is over 1 billion jin.

In the ancient waterways of the Huang He, the temperature in summer is high, the temperature difference between day and night is small and rainfall is too plentiful, all of which is unfavorable to the growth of apples. To solve the difficulties created by natural conditions, the Zhengzhou Fruit Trees Institute of the Chinese Academy of Agricultural Sciences established 57 scientific and research points in the ancient waterways of the Huang He and conducted scientific research activities together with the local masses. After several years of effort, they cultivated new varieties of apples such as Fu Shi which was suitable for growth in this locality. They also studied and summarized a full system of cultivation of deciduous fruit trees which suited the natural conditions of this region. Now, over 1 million mu of apple trees have been planted in this region, becoming one of our nation's major apple producing regions. Moreover, the quality of the fruit is relatively high. During the middle of the 1960's, grapes in this region were once planted on 70,000 mu. Later, because of a lack of wooden materials for the supports for the vines and because of high cost, the planting area was reduced to 30,000 mu. Consequently, the scientific and technical personnel of the Zhengzhou Fruit Trees Institute and the fruit farmers of the ancient waterway region together developed a study of cultivating grapes without supports for the vines. At the beginning of 1970, success was achieved. Now, grapes in this region are planted on more than 90,000 mu, becoming our nation's largest vineyard for wines. At present, over 40 percent of the grapes needed for the production of grape wines in our nation come from this region.

The ancient waterways of the Huang He was once one of the poorest regions of our nation. The development of fruits hastened the change in the economic situation of this region. Changshan County in Anhui Province has planted 130,000 mu of pear and apple trees with an annual yield over 100 million jin of fresh fruit. Just this one item alone has increased the annual per capita average income of the entire county by over 30 yuan. The Renhe Brigade of Minquan County in Henan Province has 1,200 mu of deserts. In the past, the per capita average income remained at about 30 yuan. At the beginning of the 1960's, over 900 mu were planted with apple trees. After harvest, the per capita average distribution rose to more than 150 yuan.

The development of fruit trees in this region has also served to break winds, stabilize sand, regulate weather and protect farmland. The fallen leaves can increase the organic substances in the soil and improve the soil. In the past, the grain crops of the Liuhuaqiao Brigade of Ningling County in Henan Province were frequently destroyed by wind and sand. Added to this the infertility of the land, the per mu yield of wheat generally did not surpass 80 jin. Since the middle of the 1960's when interplanting of fruits and food grains was implemented, each year has seen 800,000 jin of pears harvested and the average per mu yield of wheat reach over 600 jin. Agricultural science and technical workers believe further development of fruit trees in the ancient waterways of the Huang He in a big way should be one of the fundamental measures to reform this region.

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CSO: 4007/565

PLASTIC FILM USED TO MULCH PEANUT PLANTS

Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 3, 1981 p 26

[Article by Zhang Xueli [1728 1331 4539], Jin County Institute of Agricultural Sciences, Liaoning Province, and Chen Qingnan [7115 1987 0589], Jin County Agricultural Bureau, Liaoning Province: "Cultivation of Peanuts with Plastic Mulch"]

[Text] The use of plastic film in peanut cultivation is a new high-yield method and an effective technique for preventing damage by low temperatures. Our county began experimenting with the method in 1979, and carried out experiments and demonstrations in many areas during 1980, all of which produced considerable increases in yield. In 1980, 11 experimental and demonstration plantings were made, with a total area of 144.9 mu, and the average increase in yield of unshelled peanuts was 160.4 jin per mu, or 36.2 percent. On the average, it is calculated that this will yield an increase of 55.14 yuan per mu in income. In addition, this cultivation method can also increase the fullness and number of kernels and save seeding, hoeing and thinning.

The principles on which mulching of peanuts with plastic film is based are: (1) it can increase soil temperature and allow earlier sowing; (2) it can decrease soil moisture evaporation; (3) the soil does not become hard, and has good aeration characteristics; (4) breakdown of organic matter is promoted. These principles for increasing yield are self-evident and will not be discussed in detail here. Below we primarily discuss important points of technique.

1. What kind of film should be used? According to our experiments, green, dark grapy or light gray polyethylene film produces the best temperature increase, followed by clear film, with black film the poorest. As to film thickness, 0.015 mm film is preferable to film 0.02 mm or more thick, and 0.012 mm film is preferable to 0.015 mm film. Surveys indicate that 21.8-26 jin of approximately 0.02 mm Dalian or Shenyang film is required per mu, costing 40-48 yuan; 17.35 jin of 0.015 mm Japanese or Changsha film is required per mu, costing 31.75 yuan; and 13.8 jin of 0.012 mm Dalian film is required per mu, costing 25.33 yuan. Film 90-95 cm wide is the most suitable. Before the film leaves the factory, holes should be punched in it at the proper spacing for the plants; factories which can only produce the film without holes should mark the plant spacings on it. The best length for the film is 200 m per bundle.

2. How should the ground be selected and prepared? According to our 2 years of experience, sandy soils with a good topsoil layer, good moisture and fertilizer retention properties and a loose layer for fruiting is best. Heavy, clayey soils should be improved with sand. Wind-blown soils are loose and insufficiently cohesive, and cannot be used to hold down the plastic once it is applied. Peanut fields where it is desired to use a plastic mulch should be deeply plowed and worked in autumn, then raked to remove rubbish. In early spring they should be compacted to retain soil moisture.

3. How should fertilizer be applied? With plastic mulching, soil organic matter is broken down and utilized rapidly, and if insufficient fertilizer is supplied, peanut growth in the later stage may be affected. The amount of ammonia fertilizer used should be one-third less than in ordinary cultivation, otherwise the plants will cover the exposed ground surface too early, resulting in leaf rot or leaf spot. In general, 8,000 to 10,00 jin of manure, 80-100 jin of calcium superphosphate, 15-20 jin of ammonium bicarbonate and 200 jin of straw and wood ash should be applied per mu. Chemical fertilizers can be applied in the process of ridging and preparing the beds.

4. What varieties should be planted? The varieties selected should have the following characteristics: (1) early-maturing, dwarf habit, limited branching, without excessively luxuriant growth; (2) bush or semi-vining variety; (3) many-flowered varieties which flower from the base and fruit in clusters; (4) disease-resistant varieties which do not die back early. In our county the frost-free period is 160-190 days and Luhua No 2, Xuzhou No 68-4 and Jinjiao No 4 intermediate-maturing varieties of peanuts are most suitable. With suitable plastic mulching, the plants cover the ground rather early, so that it is best to use the wide-and-narrow row method. Within a 95-100 cm wide bed, (including the irrigation furrow), two rows are planted; the smaller distance between the rows is 45 cm and the spacing between drills is 15-20 cm; two kernels are planted in each drill, and in our experience an increase in the spacing of plants and use of three seeds per hole tends to give higher output.

5. How should the beds be prepared and covered with plastic? The best bed width is 100 cm (including the irrigation ditch), with a height of 10-15 cm and a surface 70 cm wide, to assure that with a small spacing (40 cm) between the rows, there will be 15 cm of fruiting area on each side. When the plastic is laid down, there must be a 10-cm overlap so that soil can be used to hold it down at the side of the bed. In areas with severe spring droughts, the plastic should be applied 5 to 7 days before sowing; in areas with good soil moisture the beds may be prepared, the plastic applied and the seed sown at the same time. If the beds are made 1 or 2 days before the plastic is applied, the surface of the ridged area is arched slightly and pressed down with a wooden roller. If film without herbicide is used, herbicide must be sprayed on the bed surface and the irrigation ditch. Each mu can be sprayed with 0.5 to 0.6 jin of lasuo [?lasso], 100 ml of trifluralin emulsion, or no more than 0.4 jin of pucao prometryne. Sufficient water must be applied, at least 200 jin per mu. The plastic can be applied by a group of four persons; two to lay the film and two to weight it with soil.

6. How should the sowing be done? In our experience, the highest yields are realized with sowings at the end of April or the beginning of May. There are three sowing methods: (1) the seed can be sown in drills through the holes in the plastic; (2) plastic which does not have prepunched holes can be punched while sowing is in progress; (3) the seeds can be sown before the plastic is put down and holes torn in its when the seedlings appear. We believe that the first method is the best.

7. Should the mulch be removed or not? There is considerable disagreement as to whether or not it should be removed. We believe that if the film is thin enough, the peg can pierce through it into the soil, it need not be removed. But this is not a hard-and-fast rule. The mulch loses its temperature-increasing effect after the peanut plants cover the ground, and if the ground is dry during the growth period, and cannot absorb the rain, drought conditions may be aggravated. The best time to remove the plastic is about 50 days after the seedlings appear.

In addition, because peanuts germinate early, grow more vigorously and cover the ground earlier when plastic mulch is applied, and there is more soil moisture, damage done by disease and insects is rather serious, and care must be taken to protect against them at the right times.

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CSO: 4007/460

BRIEFS

WHEAT HARVEST—Thanks to the unprecedented bumper harvest of wheat this year, the 16 million peasants in northern Anhui have received an average of 280 jin grain per capita after retaining sufficient seedlings and fodder and overfulfilling the state procurement task. Per-mu yield of the area's 18 million mu wheatfields has for the first time exceeded 300 jin while the total output has topped the all-time-high record in 1979 by 886 million jin. By the end of August, the area had overfulfilled the state procurement plan by 140 million jin. [OW201617 Hefei Anhui Provincial Service in Mandarin 1100 GMT 17 Sep 81 OW]

XIAOXIAN COUNTY COTTON HARVEST--Xiaoxian County, Anhui, this year has reaped a good harvest from 240,000 mu of cotton. As of 10 September, the county had procured 590,000 jin of ginned cotton from the producers. [OW171717 Hefei Anhui Provincial Service in Mandarin 1100 GMT 15 Sep 81]

CSO: 4020/250

BRIEFS

SUGARCANE PRODUCTION--In recent years, per-mu sugarcane yield in Fujian's Xianyou County has exceeded 10,000 jin. During the cane-pressing season of 1980-81, the county's 120,000 mu of sugarcane gave per-mu yield of more than 1,600 jin of sugar, more than doubling the national average. [OW171717 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 17 Sep 81]

LONGXI PREFECTURE FRUITS--Longxi Prefecture, Fujian, has registered a good harvest of fruits this year. Total output of fruits is expected to exceed 1 million dan, an increase of more than 3 percent over the last year. Output of litchi this year will reach 310,000 dan, 90,000 dan more than last year. Output of bananas and other fruits will double that of last year. [OW171717 Fuzhou Fujian Provincial Service in Mandarin 1100 GMT 13 Sep 81]

CSO: 4020/250

BRIEFS

BUMPER FISHING CATCH--On 28 August, the Hebei broadcasting station editorial board published a short commentary entitled "Do Everything Possible To Strive for a Bumper Autumn Fishing Catch." The commentary said that, due to the poor state of resources, the province had not fulfilled well its quotas for fishing production and procurement this year. The quantity of fishing catch and aquatic products procured this year was smaller than in the corresponding period of last year. Consequently, fishermen's income was affected and markets had difficulties in obtaining supplies of aquatic products. All prefectures and counties along the coast must make great efforts to improve this situation and resolutely strive for a bumper autumn fishing catch. The commentary demanded that all localities strengthen leadership over fishing production, further improve and perfect the fishing production responsibility system of linking remuneration with output and step up procurement of aquatic products and market control. [HK120320 Shijiazhuang Hebei Provincial Service in Mandarin 0400 GMT 24 Aug 81 HK]

CSO: 4007/596

BRIEFS

CATTLE RAISING--Harbin, 22 Sep (XINHUA)--Dorbod Mongol Autonomous County, Heilongjiang, is raising some 39,000 head of cattle of which some 3,600 are dairy cows. In the first 6 months of 1981, the county delivered more than 3,900 tons of milk to the state. In the same period, it produced 532 tons of dairy products besides milk.[OW231713]Beijing XINHUA Domestic Service in Chinese 0121 GMT 22 Sep 81 OW]

CSO: 4007/596

BRIEFS

ANTIDROUGHT WORK--Over the past 2 months, Xiangxi Autonomous Prefecture and Huaihua Prefecture have been struck by serious drought. The Hunan Provincial CCP Committee and the provincial people's government recently sent principal responsible comrades to the seriously drought-stricken areas in the autonomous prefecture to inspect the disaster situation and comfort the people in those areas. The provincial commercial departments have sent some 35,000 tons of diesel oil for use in fighting drought, 3,000 tons of gasoline for agricultural use and 10,000 tons of chemical fertilizers. [Changsha Hunan Provincial Service in Mandarin 1100 GMT 29 Aug 81 HK]

CSO: 4007/596

BRIEFS

HUAIYIN COUNTY CORN HARVEST--Jiangsu's Huaiyin County has reaped a bumper harvest from its 200,000 mu of cornfields, with per unit yield reaching 527 jin and total output topping last year's by 35 percent. [OW171717 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 15 Sep 81]

AUTUMN SOWING PREPARATIONS--Jiangsu's Shuyang County is making preparations for autumn sowing. By the end of July, the county had assigned production teams to plant 1.82 million mu of wheat, barley, naked barley, rape and green manure. The county has accumulated 80 million dan of manure for use in autumn sowing. More than 30 jin of chemical fertilizer is available for each of the 1.03 million mu of wheat, barley and naked barley. Industrial, transport, commercial and supplies departments in the county have made available for autumn sowing more than 20,000 dun of chemical fertilizer, more than 50,000 farm implements and more than 1,000 dun of farm chemicals. [OW171717 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 16 Sep 81]

CSO: 4020/250

BRIEFS

XINFENG COUNTY TOBACCO--By the end of August, Jiangxi's Xinfeng County had procured 1.05 million jin more cured tobacco than during last year, which was 5.7 times the 1980 figure, thereby fulfilling this year's tobacco procurement plan. Some 64 percent of the procured tobacco is marketable. This year the county planted tobacco on 18,385 mu, which was 2.3 times the last year's acreage. [OW171717 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 16 Sep 81]

CSO: 4020/250

BRIEFS

WATER STORAGE--Changchun Municipality, Jilin Province, has closed the sluice gates of the city's 19 large and medium-sized reservoirs to store ample water for next year's irrigation, urban water consumption and power generation. By 11 September, the reservoirs had stored 560 million cubic meters of water, an increase of 85 million cubic meters over the corresponding 1980 period. [Changchun Jilin Provincial Service in Mandarin 2200 GMT 10 Sep 81 SK]

CSO: 4007/596

BRIEFS

GAI COUNTY COTTON HARVEST--Gai County, Liaoning Province, reaped a bumper cotton harvest in 1981. The per-mu yield is estimated at 102.7 jin, and the total output is expected to increase 30 percent over the 1981 figure. [SK210332 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 20 Sep 81 SK]

CSO: 4007/596

BRIEFS

AGRICULTURAL LOANS--The Bayannur League Agricultural Bank, Nei Monggol Region, granted 7 million yuan of agricultural loans this year to help commune members grow sunflowers, hops and beets. This year, hop-growing areas in the league increased 290 percent over 1980. Sunflower-growing areas totaled 758,000 mu, and beet-growing areas reached 278,000 mu. [SK091010 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 8 Sep 81 SK]

WOOL PROCUREMENT--Hohhot, 15 Sep (XINHUA)--As of the end of August, Nei Monggol had already overfulfilled its annual wool procurement plan by 19.2 percent. The amount of wool procured was 5.9 percent higher than the total amount of wool purchased in 1980. [Excerpt] [OW151221 Beijing XINHUA Domestic Service in Chinese 0052 GMT 15 Sep 81 OW]

CSO: 4007/596

SUPERIOR COTTON VARIETY 'BO MIAN NO 1' BRED

Jinan DAZHONG RIBAO in Chinese 9 Aug 81 p 1

[Article: "Our Province Again Breeds a Superior Cotton Variety; 'Bo Mian No 1' Passes Evaluation; Its Per Unit Yield and Its Fiber Quality Are Slightly Higher Than Those of 'Lu Mian No 1'"]

[Text] Another superior cotton variety "Bo Mian No 1" of Shandong Province has passed evaluation recently at Beizheng. At the evaluation meeting held by the provincial scientific committee, 31 cotton specialists, professors and scientific and technical workers from all over the nation were of the opinion that the per unit yield of "Bo Mian No 1" was slightly higher than that of "Lu Mian No 1," the gin turnout, the length of lint and the quality of the fiber are better than those of "Lu Mian No 1," and it can be used as an appropriate new variety of cotton for grouped planting in our province at present.

"Bo Mian No 1" was selectively bred by hybridization in 1973 by the Hiumin Prefectural Agricultural Science Institute and was successfully bred and named in 1977. From 1978 to 1979, it participated in regional experiments of new cotton varieties of the province. From 1979 to 1980, it again participated in the national regional experiments of new cotton varieties for the Yellow River Valley. The per mu yield of ginned cotton averaged 171.7 jin. It is an early maturing (slightly early medium-maturing) variety. The entire growth period is about 142 days, the flowering rate before the frost period is 79.5 percent. The single boll weighs about 4.8 grams, the boll opens easily and the content is white. The growth trend is strong, growth during the latter period is better, it matures early but does not wither early, it can fully utilize the effective boll forming period, and the potential for increased yields is high. In addition, the root system of this variety is developed, the plant roots deeply, the area of extension of the side roots is large, the plant's ability to resist drought is stronger and its revival after encountering disasters is also stronger. According to determinations made by concerned units, its fibers are longer; the fineness, strength and maturation coefficient of the fibers are medium. The fibers are longer than the main body of the fibers of "Lu Mian No 1" by 1.56 millimeters, the strength is 0.3 grams, and the breaking length is 1.66 kilometers. The comprehensive evaluation showed the quality of the cotton textile is from first grade premium to second grade premium.

9296
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INCREASED GRAIN, COTTON YIELDS IN LINQING COUNTY ACHIEVED

Jinan DAZHONG RIBAO in Chinese 11 Aug 81 p 1

[Article: "Many Commune Brigades in Linqing County Have Found a Way to Produce Increased Yields of Both Food Grains and Cotton; Cotton Stimulates Increases in Food Grains, Food Grains Assures Cotton Increases; Responsible Comrades of the State Council Encourage Them to Go Ahead and Plant More Cotton and Contribute More"]

[Excerpts] XINHUA, August 9, Jinan: The key cotton producing regions have developed their local superiority, expanded the planting of cotton and contributed more to the state. Will these efforts increase the state's burden of food grains? "No, we have proven through more than 2 years of practice that by planting more cotton, food grains have not declined much from the past. Now many commune brigades have found a way to produce increased yields of both cotton and food grains." This was the statement made by Wang Jiasheng [3769 0502 0524], secretary of the Linqing County committee, who spoke recently at the discussion meeting on cotton production held in Jinan. The meeting was attended by responsible comrades of the State Council. The responsible comrades of the State Council were satisfied by the report given by the Linqing County committee and encouraged the committee members to insist on following this road, i.e., to plant more cotton and to contribute more to the state.

Linqing County has historically been a famous cotton producing region. During the 1950's, income from cotton constituted over two-thirds of the total income from agriculture. The farmers lived a rich life. Later, because of the influence of the leftist ideology, food grains were one-sidedly grasped and cotton production was squeezed out resulting in the very slow development of agriculture. After the Third Plenum of the Party's 11th Congress, the Linqing County committee started out from the actual situation of the locality, revived and developed cotton production, and realized "grasping food grains and cotton together and grasping cotton in a key manner." The yield of cotton for the entire county continued to create new records and the per unit yield of food grains reached new levels year after year. Comparing 1980 to 1978 shows the total yield of cotton for the whole county increased from 123,000 dan to 517,000 dan; total agricultural income increased from 53.04 million yuan to 127.8 million yuan; per capita average of ginned cotton sold to the state increased from 25 jin to 105 jin; the collective savings increased from 4.31 million yuan to 22.07 million yuan; average per capita distribution to commune members increased from 42.2 yuan to 141 yuan.

"Will the expansion of the area of cotton fields affect the yield of food grains?" This is a question that has been debated ceaselessly for the past 2 years in Linqing County. A unified understanding was gained only this year when a bumper wheat harvest was gained. Practice has proven that developing cotton production will not affect the yield of food grains but can stimulate the production of food grains. Some years ago, this county grasped food grains and squeezed out cotton. The area of food grain fields expanded but because the brigades did not have money, because there were no fertilizers to apply to the soil and because the people were poor and the land was infertile, the yield of food grains did not increase with the unit yield remaining at 300 to 400 jin. During the past 2 years, cotton production increased, effectively providing massive amounts of fertilizers for increased food grain production in four aspects: One is cake fertilizer which is a sideline product of cotton. The second is that the income from cotton was used to purchase phosphorous fertilizers. The third is the purchase of chemical fertilizers resulting from rewards for increased yields of cotton. The fourth is that the cotton has provided miscellaneous and indigenous [compost] manure for agriculture. During the recent 2 years, the fertility of cotton fields and food grain fields visibly increased because of the addition of fertilizers. Also, because the economic value of cotton is high, the gain is large. Planting more cotton can provide massive amounts of capital for increasing the yield of food grains. The production teams and the commune members now have money and thus have the strength to build water conservancy projects, purchase large and medium-sized farm equipment and chemical fertilizers. Therefore, comparing this year to last year, although the area of wheat of the entire county was reduced by over 50,000 mu, the per unit yield rose by 108 jin and the total yield increased by 24.81 million jin, an increase of 34 percent. The commune members expressed their popular opinion that this year's bumper harvest of wheat was due to last year's bumper harvest of cotton.

The experience of Linqing shows that with the production responsibility system, cotton has stimulated increases in food grains, food grains have assured the increase in cotton, and this cycle and interdependence enabled both food grains and cotton to increase their yields.

9296
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BRIEFS

WATER SUPPLY PROJECT—The CCP Central Committee and the State Council recently decided to award a contract for the construction of the "Yin Luan" project to Tianjin Municipality. The project, financed by the state, calls for construction of facilities to transfer water from the (Panjiakou) reservoir in Hebei Province to the (Yuqiao) reservoir in Jixian County of Tianjin, construction of water storages in Tianjin suburbs and laying of pipes leading to Tianjin urban areas. To prepare for the construction project, the Tianjin Municipal CCP Committee held a meeting on 14 September and planned to start the construction in early 1982. [OW201439 Beijing Domestic Service in Mandarin 1200 GMT 15 Sep 81 OW]

CSO: 4007/596

BRIEFS

FORESTRY CONFERENCE—The provincial forestry work conference ended in Hangzhou on 19 September. The meeting called on party committees and people's governments at all levels to do a good job in establishing ownership of hills and forests and implementing forestry production responsibility systems. The conference was held by the Zhejiang Provincial CCP Committee and people's government. Chen Zuolin, secretary of the provincial party committee, and Wu Zhichuan, vice governor, spoke at the meeting. The meeting was attended by responsible persons of prefectural, municipal and county party committees, forestry bureaus and courts, PLA units stationed in Zhejiang and provincial departments concerned. [Hangzhou Zhejiang Provincial Service in Mandarin 1040 GMT 19 Sep 81 OW]

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TITLE: "Oxygen Sensitive Nitrogen-fixing Mutants of Anabaena"

SOURCE: Beijing ZHIWU XUEBAO [ACTA BOTANICA SINICA] in Chinese No 4, Jul 81 pp 288-296

TEXT OF ENGLISH ABSTRACT: Two Anabaena mutants having heterocysts but incapable of fixing molecular nitrogen in air have been isolated by using ultraviolet radiation or NTG mutagenesis. Their vegetative cells differentiated into heterocysts at a higher frequency than did those of the wild type. The phenotype of the mutants is stable and a low frequency of spontaneous reversion was observed.

Under microaerobic conditions the mutant cells can express the genetic information which encodes nitrogenase synthesis and are capable of utilizing nitrogen for growth with a low acetylene reduction activity. The level of nitrogenase activity was correlated reciprocally with the content of cell phycocyanin and the light intensity. Both synthesis and activity of the mutant nitrogenase were very

[Continuation of ZHIWU XUEBAO No 4, Jul 81 pp 288-296]

sensitive to oxygen in vivo when compared with the wild type. Introduction of 1 percent O_2 (v/v) into the gas phase inhibited acetylene reduction evidently. Exposure of the mutant suspension to 20 percent O_2 (v/v) resulted in total and irreversible denaturation of nitrogenase. Withdrawal of O_2 in the gas phase resulted in synthesizing the nitrogenase de novo. The synthesis process was repressed by chloramphenical or ammonia.

The nitrogenase activity of mutant cells increased significantly either by nitrogen-starvation to decrease the phycocyanin content or by lowering the light intensity. Specifically, during the anaerobic induction by treating the mutant filaments with dichloromethylurea, which prevents photosynthetic oxygen production, the specific activity of mutant nitrogenase was nearly equivalent to that of the wild type. The ability to reduce 2, 3, 5-triphenyltetrazolium was lower in heterocysts and vegetative cells of mutants than in those of the wild type.

The results suggest that the oxygen sensitivity of nitrogen fixation by heterocystous blue-green algal mutants may be due to the defect of some enzymic systems which might play a role in scavenging oxygen toxicity, so that the process of nitrogen fixation is inhibited by the active oxygen produced by vegetative cells. The mechanism of protecting nitrogenase from oxygen damage in blue-green algae is discussed.

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TITLE: "Studies on Nitrogen Fixation and Photosynthesis in Azolla imbricata (Roxb) and Azolla filiculoides Lam"

SOURCE: Beijing ZHIWU XUEBAO [ACTA BOTANICA SINICA] in Chinese No 4, Jul 81 pp 306-315

TEXT OF ENGLISH ABSTRACT: Azolla imbricata and Azolla filiculoides were studied in regard to: the nitrogenase-catalyzed reactions of C_2H_2 reduction and H_2 production, employing gas chromatography, and photosynthetic CO_2 uptake as well as simultaneous determination of C_2H_2 reduction, photosynthesis and respiration in a closed system. Photosynthetic CO_2 uptake and respiratory CO_2 production were determined using an infrared gas analyzer. These studies have indicated the following: 1. Nitrogenase-catalyzed C_2H_2 reduction is largely light dependent. About 10,000 lux were required for saturation in A. imbricata. A concentration of 10 percent C_2H_2 in the gas phase is saturating for C_2H_2 reduction, and 1 percent CO inhibits C_2H_2 reduction with concomitant H_2 production. 2. A determination of

[Continuation of ZHIWU XUEBAO No 4, Jul 81 pp 306-315]

C_2H_2 reduction activity as a function of leaf age established a developmental gradient in both A. imbricata and A. filiculoides. In both species activity is negligible in the apex, increases markedly in progressively older leaves, plateaus, and decreases as leaves senesce. The developmental gradient of activity is much steeper in A. imbricata than in A. filiculoides due to differences in their gross morphology. 3. Nitrogenase-catalyzed H_2 production in A. imbricata was not detectable under Ar, but was appreciable under Ar containing 15 percent C_2H_2 and 2 percent CO. H_2 production was also determined under the latter gas phase as a function of the leaf. These studies implicate the occurrence of an uptake hydrogenase. 4. The photosynthetic compensation points in air are approximately 30 ppm CO_2 for A. imbricata and A. filiculoides. 5. Simultaneous measurements of photosynthesis, respiration and C_2H_2 reduction in A. imbricata demonstrated the immediate dependence of nitrogenase on photosynthetically captured radiation for energy, but an indirect dependence on CO_2 fixation.

9717
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TITLE: "Pheromone of Pectinophora gossypiella: The Effects of Habituation on Short Distance Response Level of Males"

SOURCE: Beijing KUNCHONG XUEBAO [ACTA ENTOMOLOGICA SINICA] in Chinese No 3, Aug 81 pp 244-250

TEXT OF ENGLISH ABSTRACT: Exposure of male moths of the cotton pink bollworm, Pectinophora gossypiella (Saund.), to Gossyplure, the sex pheromone of P. gossypiella, resulted in diminishing short distance sexual response to natural female extract. The degree of habituation was proportional to the logarithm of the pheromone dosage. Habituation raised the responsive threshold of males to the sex pheromone. Nearly all habituation to pheromone occurred during the first 10 minutes of exposure, but the time required for recovery from habituation was longer and was dosage dependent. Z-7, Z-11-hexadecadienyl acetate, one component of Gossyplure, inhibited the male response to natural female extract more effectively than did Gossyplure. The relation between habituation of sex behavior response of males to sex pheromone and disruption of mating in fields under the conditions of dense or sparse population is discussed.

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TITLE: "The Relation between Long-distance Northward Migration of the Brown Planthopper (Nilaparvata lugens Stal) and Synoptic Weather Conditions"

SOURCE: Beijing KUNCHONG XUEBAO [ACTA ENTOMOLOGICA SINICA] in Chinese No 3, Aug 81 pp 251-261

TEXT OF ENGLISH ABSTRACT: Synoptic analyses of long-distance migration of the brown planthopper Nilaparvata lugens Stal in the southeastern part of China in 1977 and 1978 have shown the following characteristics:
(1) The immigratory areas in the northward migration in spring-summer are often controlled by the frontal zone and the subtropical high, and they may be divided into the frontal zone controlled type and the subtropical high controlled type.
(2) The emigratory areas in the northward migrating process in spring-summer are located in the warm sector of warm low on surface and in partial southern air stream on 850 mb isobaric chart, especially in the region controlled by the southwest air stream.

[Continuation of KUNCHONG XUEBAO No 3, Aug 81 pp 251-261]

(3) The meteorological factors, such as temperature, wind velocity and rainfall, etc., have an important influence on the emigration, immigration and migratory process of the brown planthopper.

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TITLE: "Studies on the Kairomone Influencing Oviposition Behavior of Tetrastichus schoenobii Ferriere: Source and Extraction"

SOURCE: Beijing KUNCHONG XUEBAO [ACTA ENTOMOLOGICA SINICA] in Chinese No 3, Aug 81 pp 262-267

TEXT OF ENGLISH ABSTRACT: The present paper is the first part of a study dealing with the chemical stimulant (kairomone) initiating oviposition behavior of Tetrastichus schoenobii, an egg parasite of the yellow paddy borer, Tryporyza incertulas (Walker). It demonstrates the location of the kairomone in Tryporyza incertulas and Scirpophaga sp., and describes a method of extraction of the active ingredient from the host.

The results demonstrate that the kairomone which elicits both the host-searching and oviposition behavior by T. schoenobii female is located in both the hairs of the host egg mass and the anal tuft of the female moth. The active ingredient was successfully extracted by acetone-water (1:1) solvent. However, it cannot be

[Continuation of KUNCHONG XUEBAO No 3, Aug 81 pp 262-267]

extracted by n-hexane. If acetone-water extract of the host egg hairs was applied to a paper model egg, the model egg elicited both the antennal drumming and inserting of the ovipositor of the parasite.

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TITLE: "The Parasites of the Rice Gall Midge (Orseolia oryzae (Wood-Mason)) in Guangdong Province and Their Susceptibilities to Insecticide Applications"

SOURCE: Beijing KUNCHONG XUEBAO [ACTA ENTOMOLOGICA SINICA] in Chinese No 3, Aug 81 pp 274-282

TEXT OF ENGLISH ABSTRACT: During the last four years the authors have conducted a series of investigations on the collection, rearing and identification of the parasites of the rice gall midge in Guangdong Province. Preliminary observations on the bionomics of the parasites and experiments on the effect of insecticides on them were also carried out. The results of studies obtained are summarized as follows:

1. Altogether five species of hymenopterous parasites on the rice gall midge have been found in Guangdong Province. They are: Platygaster sp. (gregarious endoparasite), Platygaster sp. (solitary endoparasite), Neanastatus grallarius Masi, Neanastatus oryzae Ferriere, and Obtusiclava oryzae Sabba Rao. The morphology of

[Continuation of KUNCHONG XUEBAO No 3, Aug 81 pp 274-282]

the various stages of these parasites is described and a brief account of their bionomics is also given. Usually the gregarious Platygaster parasite is the predominant species, but during the seedling and tillering stage of the late crop (both in the seed beds and in the field) the population of Neanastatus may increase to as high as 70-80 percent of the total of the five species. These parasites possess different characteristics in biology and play different roles in suppressing the outbreaks of rice gall midge. Further investigations will help us to know how to utilize these parasites in the program of integrated pest management in rice fields.

2. The percentage of parasitism of the rice gall midge in the seed beds and fields of the late crop was found to be very high, in some cases as high as 90 percent or more. This contributes an important factor to the control of populations of the gall midge. The outbreak of the gall midge is closely correlated to the cropping system; the late crop and the triple rice crop afford a "bridge" for the favorable reproduction of the gall midge. The irrational application of insecticides kills the natural enemies and is also one of the factors leading to the resurgence of the insect pest.

3. According to investigations made in 1976 in the Sanhua Brigade, Hua County, the percentage of parasitism on the rice gall midge in the overwintering generation in wild rice (Oryzae rufipogon) reached as high as 65 percent, and in the first and second generations of the early crop the parasitism was found to vary from 32.5 percent to 33.3 percent. However, in the seed beds of the late crop, due to the frequent applications of insecticides, usually with a spraying of Methyl Parathion-

[Continuation of KUNCHONG XUEBAO No 3, Aug 81 pp 272-282]

BHC and Dimethoate at an interval of four to five days, the percentage of parasitism dropped to 1.53 - 4.5 percent, whereas in the field with no insecticide treatment it was about 44 percent. This indicates that the conventional method of the application of insecticides adversely affects the parasites.

4. Laboratory experiments were carried out to determine the toxicity of several insecticides on the parasites of the rice gall midge. As a contact poison the organophosphorus compound Pyrimioxythion (N-23) was the most toxic, and chlorodimeform was the least toxic. The order of toxicity to Platygaster sp. was: Pyrimioxythion > Trichlorofon > Dimethoate > (2, 5-Dimethylphenyl-N-methylcarbamate) > Chlorodimeform. The LC_{50} of the five compounds was estimated to be 1.1, 3.5, 5.5, 15.0 and 24.0 ppm, respectively. As a foliar spray, Pyrimidoxythion is also more toxic than Methyl Parathion-BHC to Obtusiclava oryzae and Neanastatus spp. The formulations and application methods of the insecticides is very important for the protection of the parasites. As a rule, broadcasting of impregnated dusts is less hazardous to the natural enemies and the root-zone method of application gives good protection to the parasites and spiders in the rice field. Thus there is a possibility that the rational use of insecticides will help to increase the stability of the paddy agro-ecosystem and it may be of great utility in developing an efficient integrated control program for the rice gall midge as well as other insect pests.

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TITLE: "Studies on the Rice Virus Vector Small Brown Planthopper Laodelphax striatella Fallen"

SOURCE: Beijing KUNCHONG XUEBAO [ACTA ENTOMOLOGICA SINICA] in Chinese No 3, Aug 81 pp 283-290

TEXT OF ENGLISH ABSTRACT: The small brown planthopper Laodelphax striatella Fallen is the vector of rice black-streaked virus and rice stripe virus. The incubation period of black-streaked virus in the vector is from 17 to 19 days; this virus persists in the vector but there is no transovarial passage. The low temperature threshold for acquisition feeding is below 8°C, and the vector cannot acquire and transmit this virus at 4-5°C.

The vector occurs in six generations per year. Many emigrating macropterous adults occur in the first and third generations; the transmission cycle of the virus and its vector is as follows: winter wheat → the first crop of rice → the second crop of rice. The major infection periods occur in late May and early June during the early transplanting stage for the first crop of rice, in the middle of July and

[Continuation of KUNCHONG XUEBAO No 3, Aug 81 pp 283-290]

early August during the seedling and early paddy field stage for the second rice crop, and in the winter during the seedling stage of barley and wheat.

Based on the cultural practices, such as synchronizing the rice planting in vast areas and selecting and utilizing the resistant rice varieties, the virus diseases can be controlled by killing the vectors with insecticides at the winter seedling stage of barley and wheat, and at the early paddy stage of the second rice crop.

9717
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TITLE: "Notes on Some Freshwater Rotifers from China"

SOURCE: Beijing DONGWU FENLEI XUEBAO [ACTA ZOOTAXONOMICA SINICA] in Chinese No 3, Jul 81 pp 235-243

EXCERPT FROM ENGLISH ABSTRACT: The material upon which the present paper is based was collected as part of the general limnological survey of 13 reservoirs in south China during July to September, 1978. Among the material, four species and subspecies are considered to be new to science, while Filinia camasecla cambodgensis Bērziņš, Testudinella brycei Hauer and Lecane ohioensis v. jorroi (Arévalo) are recorded for the first time in China. The diagnostic features of these new taxa are provided.

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TITLE: "Two New Subspecies of Fleas of the Genus Amphalius Jordan, 1933 (Siphonaptera: Ceratophyllidae)"

SOURCE: Beijing DONGWU FENLEI XUEBAO [ACTA ZOOTAXONOMICA SINICA] in Chinese No 3, Jul 81 pp 287-290

TEXT OF ENGLISH ABSTRACT: Amphalius spirataenius badongensis Ji, Chen et Wang, subsp. nov.
The apical appendage of aedeagal apodeme forms a spiral of four convolutions, while that of the nominate subspecies curls in only three convolutions. Setae in the lateral patch on tergum VIII of female are pointing backward, but those of the nominate subspecies upward and even slightly forward. Types ex Ochotona thibetana from Shennongjia, Hubei, are deposited in the Institute of Epidemiology, Chinese Academy of Medical Sciences, Beijing.

[Continuation of DONGWU FENLEI XUEBAO No 3, Jul 1981 pp 287-290]

Amphalius clarus kunlunensis Yu et Wang, subsp. nov.
The movable process has nearly the same width from top to base, while that of the nominate subspecies expands gradually to the base. The postero-lateral margin of the posterior arm of sternum IX is concave upward and has a sinus, while, on the contrary, that of the nominate subspecies is convex ventrally and without a sinus. Types ex Ochotona macrotis from Yutian, Xinjiang, are deposited in the Institute of Epidemiology, Xinjiang Uyghur Autonomous Region.

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TITLE: "A New Species of Macrostylophora from Yunnan (Siphonaptera: Ceratophyllidae)"

SOURCE: Beijing DONGWU FENLEI XUEBAO [ACTA ZOOTAXONOMICA SINICA] in Chinese No 3, Jul 81 pp 298-299

TEXT OF ENGLISH ABSTRACT: Macrostylophora luchunensis, sp. nov.
It resembles M. bispiniforma Li, Hsieh et Yang, 1976, in the following characteristics: (1) dorsal margin of pronotum rather humped off roundly; (2) with a short antepygidial process and two antepygidial bristles; (3) body rather large. But the new species differs from the latter in: (1) the posterior margin of sternite VII more or less truncate, with a wide but shallow sinus, (2) posterior end of the head of spermatheca somewhat rhomboid.

Holotype female, body length 4.0 mm, hind tibia 0.5 mm, collected from Luchun, Yunnan, in April, 1972, off Ratufa bicolor. Deposited in Guiyang Medical College.

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TITLE: "A New Species of the Genus Urochela Dallas (Hemiptera: Urostylidae)"

SOURCE: Beijing DONGWU FENLEI XUEBAO [ACTA ZOOTAXONOMICA SINICA] in Chinese No 3, Jul 81 pp 320-321

TEXT OF ENGLISH ABSTRACT: Urochela sordida, sp. nov.
Male: Length 10.91 - 11.22 mm, width 4.44 - 5.10 mm. First segment of antenna dark brown, densely covered with black punctures, second and third segments black, fourth and fifth segments with basal half yellowish-brown and apical half black, all segments clothed with depressed short hairs. Lateral margins of pronotum straight and conspicuously recurved upwardly. Connexivum black, yellowish-brown at incisures. Six irregular black spot-stripes situated on both sides of each abdominal segment. The ventral process of pygofer recurved upwardly.

Female: Larger.

Holotype male, allotype female, paratypes three male, two female, Kangding, Sichuan; 18 November 1973. Allied to U. tunglingensis Yang, but different in lateral margins of pronotum being nearly straight, its anterior half slightly arcuated; connexivum black, yellowish-brown at incisures; the ventral process of

[Continuation of DONGWU FENLEI XUEBAO No 3, Jul 81 pp 320-321]

male pygofer illustrated in figures. All type specimens are deposited in the Northwest Plateau Institute of Biology, Chinese Academy of Sciences.

9717
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JPRS 79171

8 October 1981

China Report

AGRICULTURE

No. 167

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JPRS 79171

8 October 1981

CHINA REPORT

AGRICULTURE

No. 167

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

Poisoning of Workers by Farm Chemicals Increasing
(GUANGMING RIBAO, 14 Aug 81, DAZHONG RIBAO, 6 Aug 81)..... 1

Emergency Measures
Appeal for Caution, Guidance, by Zhang Junjie

Climatic Classification of Hot Dry Winds in North Wheat Area
(QIXIANG, May 81)..... 3

Ways of Improving Hybrid Rice Seed Production Described
(Lou Xirang; NONGYE KEJI TONGXUN, 17 May 81)..... 19

Anhui

Briefs
Wheat Output 22

Fujian

Increase in Tea Production, Exports in Fujian
(Lin Guitang, Chen Youren; GUANGMING RIBAO, 10 Aug 81)..... 23

Briefs
Mushroom Meeting 24

Guangdong

Foshan Works To Overcome Crop Losses From Rains
(NANFANG RIBAO, 30 Jul 81)..... 25

Procurement Prices Increased for Beans, Oil
(NANFANG RIBAO, 1 Aug 81)..... 27

Record Output of Spring-Planted Peanuts, Other Crops
(NANFANG RIBAO, 9 Aug 81)..... 28

Late Rice Transplanting Basically Completed by 7 August
(NANFANG RIBAO, 11 Aug 81)..... 30

Bumper Rice Harvest in Chaoan County Despite Disease
(NANFANG RIBAO, 14 Aug 81)..... 32

Early Rice Increase in Zhanjiang Prefecture
(Lan Yuankuan, Zhang Qingjin; NANFANG RIBAO, 18 Aug 81)..... 34

Guangxi

Briefs
Drought in Guangxi 36

Hebei

Afforestation Proceeding Well During Rainy Season
(Peng Chuntai; HEBEI RIBAO, 6 Aug 81)..... 37

Hubei

Briefs
Cotton Procurement 38

Jiangsu

Briefs
Cotton Procurement 39

Jiangxi

State Plan Formulated To Control Soil Erosion in Jiangxi
(GUANGMING RIBAO, 15 Aug 81)..... 40

Qinghai

Briefs
Fruit Harvest 42

Shaanxi

Water With High Sand Content Used for Irrigation
(Xu Yian, Cheng Yonghua; SHAANXI RIBAO, 6 Aug 81)..... 43

Sichuan

Importance of Afforestation Seen in Sichuan Flooding
(Xian Guangyou, Fan Shi; GUANGMING RIBAO, 21 Aug 81)..... 45

Yunnan

Progress of Agricultural Reclamation Production
(Wei Xiangjie; YUNNAN RIBAO, 28 Jul 81)..... 48

II. PUBLICATIONS

Publications

Table of Contents of 'NANJING LINCHAN GONGYE XUEYUAN XUEBAO' No 2, 1981
(NANJING LINCHAN GONGYE XUEYUAN XUEBAO, No 2, 1981)..... 50

Table of Contents of 'LINYE KEJI TONGXUN' No 5, 1981
(LINYE KEJI TONGXUN, No 5, 1981)..... 52

Table of Contents of 'SENGONG KEJI TONGXUN' No 5, 1981
(SENGONG KEJI TONGXUN, No 5, 1981)..... 54

ABSTRACTS

AGRICULTURE

ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA], No 4, Aug 81)..... 56

BIOLOGY

SHIYAN SHENGWU XUEBAO [ACTA BIOLOGIAE EXPERIMENTALIS SINICA, No 2 Jun 81)..... 64

METEOROLOGY

QIXIANG [METEOROLOGICAL MONTHLY], No 8, 10 Aug 81)..... 65

PEDOLOGY

TURANG XUEBAO [ACTA PEDOLOGICA SINICA], No 3, Aug 81..... 66

VETERINARY MEDICINE

ZHONGGUO SHOUYI ZAZHI [CHINESE JOURNAL OF VETERINARY MEDICINE], No 7, 22 Jul 81..... 73

I. GENERAL INFORMATION

POISONING OF WORKERS BY FARM CHEMICALS INCREASING

Emergency Measures

Beijing GUANGMING RIABO in Chinese 14 Aug 81 p 1

[Report: "Health Ministry and Agricultural Ministry Issue Emergency Notice Asking Each Locality To Pay Attention To Preventing Poisoning by Farm Chemicals"]

[Text] According to reports submitted to the concerned departments of the central government by each locality, there is a large amount of farm chemicals being used this year, many people have come into contact with the farm chemicals, and there have been cases of poisoning by farm chemicals. Some cases have been serious. Accordingly, the Ministry of Health and the Ministry of Agriculture recently issued an emergency notice asking the leadership of each locality to pay a great deal of attention to the problem of preventing poisoning by farm chemicals.

The emergency notice pointed out: Recently there have been more incidents of poisoning by farm chemicals. The reason is that farm villages have become less attentive in their management of poisonous substances, special farm chemicls staffs have been abolished, commune members lack knowledge of health protection, and technical guidance is not caught up. Most cases have been caused by the improper use of farm chemicals.

To concretely do well the work of prevention and emergency treatment of cases of poisoning by farm chemicals, the emergency notice made the following four demands:

1. The people's government at each level must grasp agricultural production well, and at the same time it must grasp well the safety and health of the broad number of commune members. At the same time, the leadership of separate management must also grasp well the work of protection in the use of farm chemicals.

2. In implementing the production responsibility system, the management of farm chemicals must be strengthened and national regulations related to the safe use of farm chemicals must be conscientiously implemented and carried out. Measures should be suited to local circumstances. Various kinds of specialized protection teams must be organized. The distribution of extremely poisonous farm chemicals to commune member individuals for use should be strictly prohibited.

3. Agricultural departments at each level should provide technical training and technical guidance in the safe use of farm chemicals. They should propagandize the scientific knowledge of the safe use of farm chemicals, and a management system for the safe use of farm chemicals should be established and made sound, according to relevant state regulations.

4. Health departments at each level, and especially the basic-level medical agencies in farm villages, must organize strong medical groups to carry out emergency rescue work well at all times. Health and epidemic prevention departments must strengthen the use, supervision, and inspection of farm chemicals. Propaganda activities should be launched, in coordination with agricultural departments, for the safe use of farm chemicals. Medical departments must assure the supply of medicines for emergency treatment.

Appeal for Caution, Guidance

Jinan DAZHONG RIBAO in Chinese 6 Aug 81 p 1

[Article by Zhang Junjie [1728 0193 2638] of the Shandong Provincial Agricultural Committee: "Strictly Prevent Poisoning by Farm Chemicals"]

[Text] Comrade Editor:

This summer, the situation of farm chemical poisoning at various localities in our province has become serious. According to imcomplete statistics, the number of people who have died from poisoning by farm chemicals is already two or three times the number who died of similar causes throughout all of last year. Therefore, it is suggested that the leadership at each level should pay a great deal of attention to this problem.

At present, this is the period of intensive control of insect pests on cotton. The amount of chemicals used in large, the weather is hot, and it is the peak period of poisoning by farm chemicals. It is hoped that each locality will take effective measures to strictly prevent the continued occurrence of incidents of poisoning by farm chemicals. As one measure, each level of leadership could organize concerned departments to carry out an overall inspection of safety in the use of chemicals, conscientiously summarize experiences and lessons, and help the basic levels study and draw up measures for the safe use of the chemicals. A second measure would be to launch broad propaganda and provide education in the safe use of chemicals, strengthen technical guidance, and pay attention to doing a good job of protecting labor. In hot weather, the spraying of chemicals should be stopped before and after noontime. A third measure would be to truly strengthen the management of farm chemicals and strictly obey safe operating procedures for farm chemicals. Production teams must insist on purchasing chemicals as a collective, must place the chemicals in unified storage, and must carry out collective distribution of the chemicals. Only special teams or fixed personnel of families receiving farm chemicals should be allowed to use farm chemicals. Highly poisonous farm chemicals must be strictly controlled, and the highly poisonous farm chemical sprays of furandan, fluoroacetamide, and 3911 must be prohibited so as to enusre the safe use of the chemicals.

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CSO: 4007/566

CLIMATIC CLASSIFICATION OF HOT DRY WINDS IN NORTH WHEAT AREA

Beijing QIXIANG [METEOROLOGICAL MONTHLY] in Chinese No 5, May 81 pp 11-15

[Article by the Wheat and Dry Hot Winds Scientific Research Coordination Group*: "Climatic Zoning of Dry Hot Winds Affecting Northern Wheat"]

[Text] Abstract

This article separates the different climatic regions and the different ecological types of wheat and uses different combinations of meteorological factors to determine the meterological indicators of the dry hot winds affecting wheat in the north on the basis of the degree of damage by the dry hot winds, weather characteristics and the physiological mechanisms. The data on dry hot winds over 20 years at 155 meteorological stations have been statistically analyzed according to their indicators and the patterns of occurrence have been studied. Indicators for zoning climatic regions have been determined by comparative analysis. Our nation's first climatic zoning of dry hot winds affecting northern wheat has been carried out and corresponding measures of prevention and policies have been proposed.

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*1. The wheat and dry hot winds scientific research coordination group consists of members of the provincial, municipal and autonomous regions' meteorological bureaus and related provincial academies of agricultural sciences of Shandong, Hebei, Shanxi, Xinjiang, Nei Monggol, Ningxia, Tianjin, Jiangsu, Anhui, Qinghai, and sponsored by the provincial meteorological bureaus of Shaanxi, Gansu and Henan.

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Foreword

Dry hot winds are one of the major agrometeorological disasters that affect the high and stable yields of our nation's northern wheat. During the 1960's, dry hot winds had already attracted the attention of the agricultural production departments. The so-called dry hot winds refer to the agrometeorological disaster-type of wind with high temperature, low humidity and definite velocity that occurs between flowering and the milky ripe stages of wheat. This type of wind endangers winter and spring wheat in the northern wheat regions. The regions affected by damage due to dry hot winds begin with the Huai River, Qinling, Qilianshan and north of Aerjinshan in the south and [stretches] to the Great Wall, Yingshan, Helanshan, Longshoushan and south of Altay in the north, including most of Hebei, Shandong, Henan, Shanxi, Tianjin, Jiangsu, Anhui, Shaanxi, Gansu, Ningxia, Mongolia, Xinjiang, Qinhai provinces, municipalities and autonomous regions or parts of the wheat regions. The area affected is about 200 million mu. In years seriously affected by dry hot winds, yields may be reduced by 10 to 20 percent. In less serious years, yields may be reduced by 5 to 10 percent. It is a problem worth attention in the production and cultivation of northern wheat and the cultivation of varieties.

A lot of research concerning the damage caused by dry hot winds has been done in our nation and abroad. But, a systematic analytical study of the patterns of occurrence of dry hot winds in our nation's entire northern wheat regions is still lacking. Because of this, climatic zoning of the dry hot winds over the entire region has not been done.

II. Meteorological Indicators of Dry Hot Winds

Meteorological indicators of dry hot winds are the bases for climatic analysis and zoning of dry hot winds. The damage to wheat by the dry hot winds is the result of the comprehensive influence of the ecological environment, the period of occurrence of dry hot winds, the intensity of the weather processes of the dry hot winds and the properties of resistance of the wheat itself (period of development, variety, degree of healthiness of growth). Therefore, studying the meteorological indicators of dry hot winds affecting wheat should take the degree of damage done to wheat by the dry hot winds as the prerequisite. This should be determined by starting out with the weather characteristics and the intensity of the dry hot winds and by taking the damage to the physiological mechanism as the theoretical basis.

1. The Degree of Damage Done to Wheat by the Dry Hot Winds

Wheat has a stricter demand for meteorological conditions during the flowering, filling and milky ripe periods. It does not tolerate high temperatures and low humidity. If dry hot winds are encountered during this time, the awns of wheat become solid and dry, the glumes white, the leaves brittle, the leaves, spikes and stems greyish white, the seed grains have a thick skin, the furrow of the kernel is deep and the seed grains are not plump. When seriously affected, the leaves curl up into a cord shape or remain green, wither and die. According to surveys and field measurements, light damage can cause the thousand grain weight to drop 1 to 3 grams, serious damage can cause it to drop 3 to 5 grams.

2. Weather and Climatic Background and Characteristics of Dry Hot Winds

The period of damage to wheat by dry hot winds occurs at the end of spring and the beginning of summer when the monsoons alternate before the arrival of the rainy season. Then the weather is dry and there is less rain. Because the area is under the control of the continental modified air mass and because of the increase in temperature of the lower cushioning [air] surface of the desert and the loess plateau as well as the increase in temperature due to the downward circulation caused by steep drop in topography, temperatures over the entire northern wheat region increase rapidly and abruptly. It is arid and windy, and there is less rain, forming the climatic background for dry hot winds in the northern wheat regions.

The weather trend shows that on the high altitude 500 millibar map, the subhigh extends to the south of the Changjiang. Over the Qinghai-Xizang Plateau [extending] to the Xinjiang and Mongolian Plateaus a warm high pressure system or a warm high pressure ridge develops. A large trough persists over East Asia. A warm advection occurs in the region of the dry hot winds. In coordination with the eastward shift of the hot low pressure system or the modified high pressure system on the ground surface map from Xinjiang to Hetao, and during the development of the eastward shift, the entire stratum between the ground surface and the high altitude sinks, temperature increases and the weather becomes dry and warm. The air is dry, the temperature stratification is mostly thermodynamic and stable. According to research by the Lanzhou Plateau Atmospheric Institute, the sinking region of rising temperatures can undergo a rise of 6.8°C in temperature in 24 hours. The specific humidity can drop by over 1 gram/kilogram. In addition, the increase in temperature of the lower cushioning surface of the desert and the loess plateau passed over by the eastward shift of the dry, hot air mass and the increase in the temperature due to the downward flow of air because of topography form the weather process for the dry hot winds over a large area of the northern wheat region.

The weather characteristics of the dry hot winds are reflected by the sudden visible changes in temperatures and humidity before and after the weather process. According to statistics compiled by the Shandong Provincial Meteorological Bureau, the highest daily temperature averages a drastic increase of 4°C to 7°C, reaching a maximum of 13.6°C from the day before the weather process for the dry hot winds begins to the day of the peak value of the dry hot winds. The relative humidity at 1400 hours averages a drop of 8 to 14 percent, reaching a maximum value of 40 percent. It is dry and hot both day and night; the temperature and humidity change very slightly. According to measurements taken by the Taian Prefecture Meteorological Bureau at 0600 hours and 1400 hours, the temperatures at the spikes of wheat vary only by 0.2°C, relative humidity differs only 4 percent. The temperatures at two-thirds the height of plants differ only 0.5°C, humidity differs 11 percent. In the northwest region, because the highest day time temperature rises dramatically, the daily temperature difference increases.

There are two types of dry hot winds. One is the high temperature and low humidity type and the other is greening after rain and withering. The high temperature and low humidity type mainly occurs during the flowering and filling periods.

It is the major weather type of dry hot winds affecting wheat. Greening after rain and withering which mainly damages during the latter part of the milky ripe period, is manifested by a sudden clearing after rain and relative high temperatures and low humidity.

3. The Physiological Mechanism for Damage by Dry Hot Winds

When wheat in the filling and milky ripe stage encounters sudden changes in temperatures and humidity and persistent high temperatures and low humidity, the intensity of plant transpiration increases drastically, the vitality of the root system weakens, the moisture equilibrium becomes unbalanced, the physiological functions hasten and the plant ages and dies. This causes the wheat to wither and forces maturation, thus the yield drops. According to research, dry hot winds can cause the intensity of transpiration of wheat to double. The moisture content of the leaves drops 6 percent, and the seepage of electrolytic matter increases 9 μy^{-1}. The plant loses a large amount of water while the vitality of the root system weakens and ages, absorption of P^{32} drops 147.5 pulses/minute, bleeding and absorption of moisture and inorganic salts by the root system visibly drop. This causes an imbalance in the moisture content and weakening photosynthesis of wheat. The net photosynthetic intensity and the sugar content and starch content visibly drop, the filling rate slows, and the thousand grain weight drops (see Table 1).

4. Meteorological Indicators of Dry Hot Winds

The damage to wheat caused by dry hot winds is mainly due to heat and dryness. The winds intensify the effects of heat and dryness. Therefore, selectively using a combination of the three major elements of temperature, humidity and wind to determine the meteorological indicators of the dry hot winds can reflect the actual damage to wheat by the dry hot winds. In the past, the indicators of "three threes" for dry hot winds have been widely used, but results of some of our field and simulation experiments show that the highest temperature of $\geq$ 30°C is slightly low. At the same time, because the intensity of the weather process of dry hot winds is different and because the climatic and ecological types of wheat vary, the degree of damage to wheat is also different. Therefore, we have separated the different climatic regions of northern China, the Hetao region, the Hexi Corridor, Xinjiang, and the climatic and ecological types of wheat, and we have used the different combined values of the three elements to determine meteorological indicators of dry hot winds that possess regional characteristics and that are comparable.

To reflect the damage by high temperature and to make statistical comparison of the data easy, we used the highest daily temperature, not the highest temperature at 1400 hours. We used the relative humidity at 1400 hours and the saturation difference for the humidity. To reflect the degree of damage to wheat by the dry hot winds, we differentiated between slight and severe levels as two indicators. First we determined the days of slight and severe dry hot winds according to the indicators of the dry hot winds, then we determined the weather processes of slight and severe dry hot winds according to the number of days and finally, we determined the annual type of slight and severe dry hot winds according to the number of occurrences of the dry hot wind process and the number of days. These are separately described below:

Table 1. Determination of the Damage to the Physiological Mechanism of Wheat by Dry Hot Winds (Department of Biology of Lanzhou University)

Items of physiological measurements	Simulation Experiment: Control — Temperature 10°C to 26°C, relative humidity 30-50 percent	Simulation Experiment: Dry Hot Winds — Temperature 19°C to 36°C, relative humidity 50-25 percent, wind velocity 2 to 4 meters/second	Difference
Intensity of transpiration (jin/pot/3 days)	1.03	2.33	1.30
Water content of leaves (percent), average of the boot leaf, the 2nd, 3rd and 4th leaves	72.87	68.89	- 3.98
Outward seepage of electrolytic substance of the boot leaf ($\mu\gamma^{-1}$)	45.0	54	9
Content of chlorophyll in the boot leaf (milligram/gram)	39.17	27.88	-11.29
Absorption of P^{32} by the root system (pulse/minute)*	211.25	63.75	-147.5
Assimilation of CO_2^{14}, C^{14} (output value over 24 hours)	4625.75	4020.5	-605.25
Thousand grain weight after harvest (gram)	40.77	29.04	-11.73

*The value of absorption of radioactive P by the root system is the average of the values of the seed grains, stalks, boot leaf, and the second leaf. The products of assimilation is also an average.

1) High Temperature and Low Humidity

(1) Northern China and the Fen and Wei valleys: The period of flowering and the period from filling to the milky ripe stage (same in the following) are determined by counting 1 month backward from the time of harvest of wheat and this is used to calculate the days of dry hot winds, the weather process and the annual type. Their indicators are listed in Table 2.

(2) Hetao region (including the Ningxia irrigated area, same in the following): when the highest daily temperature during the flowering and milky ripe period of wheat $\geq$ 34°C and the humidity and wind velocity are the same as those of the north China region, it is a day of severe dry hot winds. When the highest daily

Table 2. Indicators of the Days of Slight and Severe Dry Hot Winds, Weather Processes and Annual Types Affecting Wheat in the North China Region

Days of dry hot winds	Severe	Highest daily temperature ≥35°C; relative humidity at 1400 hours is ≤25 percent; wind velocity at 1400 hours is ≥3 meters/second.
	Slight	Highest daily temperature ≥32°C; relative humidity at 1400 hours is ≤30 percent; wind velocity at 1400 hours is ≥2 meters/second.
Weather processes of dry hot winds	Severe	1. Every occurrence of ≥2 days of severe dry hot winds constitutes one dry hot wind process. 2. Two continuous days of severe dry hot winds occur in one process of dry hot winds.
	Slight	1. Except for the days of slight dry hot winds included in the process of severe dry hot winds, all continuous occurrences of ≥2 days of slight dry hot winds are considered one process of slight dry hot winds. 2. A continuation of 1 day of slight dry hot winds and 1 day of severe dry hot winds or an occurrence of 1 day of severe dry hot winds also constitute one process of slight dry hot winds.
Annual types types of dry hot winds	Severe	1. Occurrence of two or more processes of severe dry hot winds during the period of damage, or the occurrence of one severe and one slight occurrence or more than 4 slight processes are considered an annual type of severe dry hot winds. 2. The occurrence of ≥4 days or more of severe dry hot winds during one process, or the occurrence of ≥7 days or more of slight dry hot winds is also considered as an annual type of severe dry hot winds. 3. The thousand grain weight of wheat generally drops 3 to 5 grams.
	Slight	1. Occurrence of more than two processes of slight dry hot winds during the period of damage, or one severe process, or a continuation of 4 to 6 days of slight dry hot winds is considered an annual type of slight dry hot winds. 2. The thousand grain weight of wheat generally drops 1 to 3 grams.

temperature ≥32°C, and the humidity and wind velocity are the same as those of the days of slight dry hot winds in northern China, it is a day of slight dry hot winds.

The process of dry hot winds and the intensity of the annual type are the same as those of the north China region.

(3) Hexi Corridor: The positive anomaly of the highest daily temperature and the cumulative values are used to reflect the sudden variation and the persistence of high temperatures during the flowering, filling and milky ripe periods of winter and spring wheat (based on statistics of 1 month respectively). When the highest daily temperature ≥30°C continues for 2 days, the cumulative value of the positive anomaly of the highest temperature during the course of the dry hot winds is 8°C to 20°C, the relative humidity at 1400 hours ≤25 percent, easterly winds occur more than once in periodic observations, this constitutes one process of slight dry hot winds. When the cumulative anomaly of the highest temperatures ≥20°C, the relative humidity at 1400 hours ≤23 percent, the wind velocity is the same as above, this constitutes a process of severe dry hot winds. The annual types of slight or severe dry hot winds are determined by the number of occurrences of slight and severe processes of dry hot winds according to the criteria for the north China region.

(4) Xinjiang region: The largest daily saturation difference is used to comprehensively reflect the characteristics of the highest temperature and the lowest relative humidity of the dry hot winds. When the largest daily saturation difference ≥40 millibars (when the daily saturation difference ≥40 millibars at this locality, the highest daily temperature averages ≥30°C) and the wind velocity at 1400 hours ≥3 meters/second, this is defined as a day of slight dry hot winds. When the largest daily saturation difference is ≥50 millibars, the wind velocity is the same as above, this is defined as a day of severe dry hot winds. The number of occurrence of the process of slight and severe dry hot winds and the annual types are determined statistically according to the criteria for the north China region.

2) Greening After Rain and Withering

If within 10 days before the wheat matures a small rain occurs once with an amount of rainfall between 5 and 10 millimeters, then the weather suddenly clears and [the following conditions] occur within 3 days there is more than 1 day with the highest daily temperature ≥30°C,, the relative humidity is relatively low and there is one day with a wind velocity ≥3 Grade--this constitutes a day of greening after rain and withering.

Even though the indicators for each locality are not entirely consistent, they are close in reflecting the physical significance of dry hot winds and the degree of damage to wheat. Therefore, the results of statistical analysis using the above indicators basically coincide with the data obtained by surveys conducted in each province. This shows their practical value.

III. Climatic Analysis of Dry Hot Winds in the Northern Wheat Regions

According to the above indicators of dry hot winds, we statistically analyzed the meteorological data for the 20 years from 1959 to 1978 at 155 representative stations in the area damaged by dry hot winds in the northern wheat regions. We combined the data with the actual occurrences of dry hot winds over the years and studied the geographic and temporal distribution patterns of dry hot winds. We found that in the northern wheat regions, the characteristics of distribution of dry hot winds are severe in the east and west and slight in the middle. Dry hot winds are severe in northern China (east of Taihangshan), the Fen River valley, Turpan, Tarim Basin, Anxi, and Dunhuang Basin. Dry hot winds are slight in Guanzhong, Hetao, and the eastern part of the Hexi Corridor. The degree of damage by dry hot winds lessens as the elevation above sea level rises (the highest generally does not surpass 1700 to 1800 meters), the damage is more serious the lower the elevation above sea level. Throughout the nation, damage is most severe in Turpan. The distribution of the areas of slight or severe damage by dry hot winds is related to the nature of the lower cushioning surfaces of mountain ranges, topography, terrain, soil, vegetation. In general, dry hot winds are more severe over low basins, along edges of deserts, waterways of river valleys, the leeward slopes of mountain ranges and saline and alkaline land. The period of damage to wheat caused by dry hot winds differs according to the variation of the southeast monsoon and the differences in the flowering period and the period from the filling to milky ripe stages of wheat. The period of damage occurs progressively later from the southeast towards the northwest. The yearly change of dry hot winds obtained by analysis coincided with the actual results obtained in provincial surveys.

1. Geographic Distribution

The geographic distribution of dry hot winds in the northern wheat regions is illustrated in Diagrams 1, 2, 3. Comprehensive analysis of figures 1-3 shows that the steep drop in topography east of Taihangshan of the North China Plain and the effect of temperature increases due to the sinking fiery winds and the effects of the low saline and alkaline land of the ancient waterways of the Yellow River have formed a region of severe dry hot winds in central Hebei, southern Hebei, eastern Henan, northern Henan, western Shandong and northwestern Shandong. The severity of the dry hot winds lessens towards the coast, the Great Wall and the Huai River. A region of dry hot winds is formed around Linfen and Houma as the center caused by temperature increases due to the sunken topography of the Fen River valley. As the topography rises towards the surrounding areas, the severity lessens. Severity of dry hot winds in the Guanzhong Plain is second to that of the Fen River valley. The Hetao region is a region of slight dry hot winds. The Hexi Corridor is affected by Qilianshan and the desert; a region of severe dry hot winds in the basin is formed over Anxi and Dunhuang. As the elevation above sea level lowers from the low mountains of Qilianshan towards the desert, the severity of the dry hot winds increases. In Xinjiang, dry hot winds are generally more severe in basins than in mountain regions; they are generally more severe in southern Xinjiang than in northern Xinjiang and more severe in the east than in the west, forming a region of distribution of dry hot winds in Turpan, Tarim and the Junggar Basin. The Turpan Basin is the region of severest dry hot winds in the nation. In the Tarim Basin dry hot winds centered at Qarkilik lessen in severity towards the edges of the basin and the deserts. In the Junggar Basin dry hot winds centered at Mosuowan become less severe towards the sides. The Huang He Valley in eastern Qinghai Province is also affected by dry hot winds.

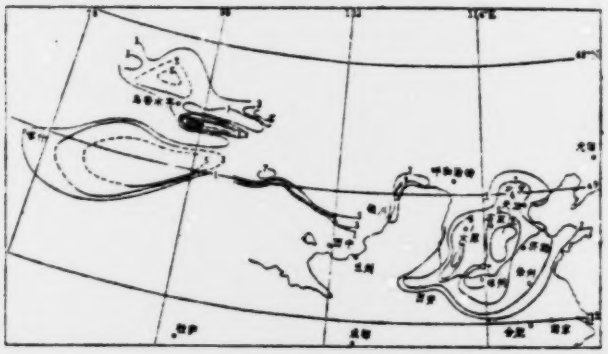

Figure 1. Average Number of Days Per Year of Dry Hot Winds in the Northern Wheat Regions

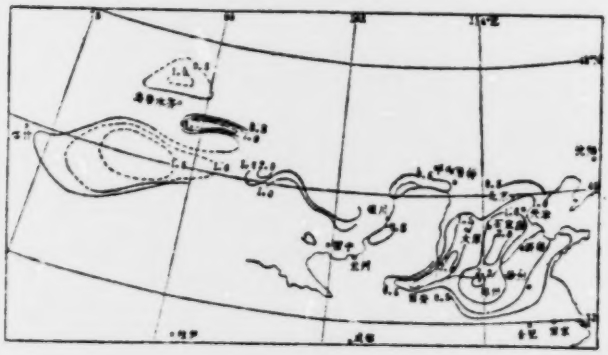

Figure 2. Average Number of Occurrences of the Dry Hot Wind Process in the Northern Wheat Regions

Figure 3. Average Probabilities of Occurrence of Dry Hot Winds Every 10 Years in the Northern Wheat Regions

2. Temporal Distribution

The period of damage to wheat due to dry hot winds at each locality and the period of concentrated occurrences are not the same (see Table 3). The period of damage begins from May and becomes progressively later from south to north and from the southeast to the northwest until the end of July. Concentrated occurrences of dry hot winds during the period of damage constitutes 50 percent to 80 percent in north China, Guanzhong, the Fen River valley and the Hetao region. Since the occurrences are more concentrated, they are beneficial to studying measures against them and favorable for building defenses well. The occurrences of dry hot winds in the Hexi Corridor and the Xinjiang Basin are relatively scattered.

Table 3. Period of Damage by Dry Hot Winds and the Period of Concentrated Occurrences in the Northern Wheat Regions

Region		Period of damage	Period of concentrated occurrence	Percentage of 10-day distribution of concentrated periods (percent)
Fen and Wei Valleys in the North China Plain		Middle and last 10 days of May to middle and last 10 days of June	End of the last 10 days of May to first 10 days of June	60 - 90
Hetao Region		Middle 10 days of June to middle 10 days of July	First and middle 10 days of July	50 - 90
Hexi Corridor in Gansu		First and middle 10 days of June to the middle 10 days of July	First 10 days of June, first and middle 10 days of July	20 - 40
Xinjiang	Southern Xinjiang	Middle 10 days of June to middle 10 days of July	Middle 10 days of June to middle 10 days of July	30 - 40
	Northern Xinjiang	Middle 10 days of June to middle 10 days of July	Middle and last 10 days of June to middle 10 days of July	30 - 40

Analysis of the intensity of the annual type of dry hot winds at each indicator station in the northern wheat region is tabulated in Table 4. It shows dry hot winds are a type of large area agrometeorological disaster. The stronger the annual type of dry hot winds, the wider the region and the area of damage, and the more severe the degree of damage. For example, 1960-1962, 1965, 1968,

Table 4. Yearly Variation and the Intensity of Annual Types of Dry Hot Winds in the Northern Wheat Regions From 1959 to 1978

Regions / Annual type / Year		North China Plain--Fen Wei Basin	Hetao Region	Hexi Corridor	Xinjiang Region
1959		none	slight	slight	slight
1960		severe	severe	slight	severe
1961		severe	severe	severe	severe
1962		severe	none	severe	severe
1963		none	none	slight	slight
1964		slight	none	none	none
1965		severe	slight	severe	severe
1966		slight	none	slight	slight
1967		severe	none	none	slight
1968		severe	none	slight	severe
1969		none	none	none	none
1970		none	slight	slight	slight
1971		slight	none	none	slight
1972		slight	slight	slight	slight
1973		none	none	none	slight
1974		severe	none	severe	severe
1975		slight	slight	slight	slight
1976		none	none	none	slight
1977		none	none	none	none
1978		slight	slight	severe	severe
10-year probability of occurrence	severe	3	1	3	4
	slight	3	3	4	5
	none	4	6	3	1

1974 were years with an annual type of severe dry hot winds throughout the entire northern wheat region. The years 1969, 1973, 1976, 1977 were years of an annual type without dry hot winds throughout the entire region. In other years, the slight and severe were interspersed, basically consistent with the data obtained by actual surveys. In years of severe dry hot winds, the number of days of dry hot winds a year in northern China and the Fen River region in Guanzhong was between 10 and 15, the number of occurrences of the dry hot wind process was more than 3 times. In the Hexi Corridor, the number of days of occurrence a year was between 5 and 15, the number of occurrences of the dry hot winds process was more than 2 to 4 times. The differences in Xinjiang were greater. Dry hot winds occurred almost every year in Toksun and Qarkilik, the number of days of occurrence a year was between 15 and 25, the number of occurrences was 9 to 10 times. In 1964, the masses reported that damage by dry hot winds was severe in northern China, the Xu-Huai and the Fen-Wei valleys and the Hexi Corridor. According to analysis, that year, except for one occurrence of a slight dry hot wind process in northern China and the Fen-Wei Basin, there were no other occurrences of dry hot winds, therefore we believe the main damage was not caused by dry hot winds but by the continuous overcast skies and rain during the beginning growth period, the serious rust disease, and weakness of the plants, and the rise in temperature and the drop in humidity after the rain which caused the plants to wither while still green forcing the plants to mature.

Analysis of the periodic variation of the dry hot winds in the northern wheat regions (diagram omitted) shows that during the 20-year period, dry hot winds were severe in the 1960's in northern China and in the Fen Wei valley and less severe in the 1970's. In the Hexi Corridor, dry hot winds were severe in the 1950's and gradually began to lessen their severity beginning in the late 1960's. The periodic variation in Xinjiang is not obvious.

IV. Climatic Zoning of Dry Hot Winds Affecting Wheat

To enable the zoning of dry hot winds to reflect the intensity of occurrence of dry hot winds at each locality and the degree of damage, each concerned provincial and regional (prefecture) meteorological departments first zoned the dry hot winds of each locality before overall zoning began. We carried out comprehensive research based on the data of the surveys and analysis and zoning of dry hot winds of each province and according to the results of climatological analysis of dry hot winds in the northern wheat regions. We decided to use the annual average number of days of dry hot winds and the number of occurrences of the dry hot wind process as the major indicators for zoning and to use the annual type and probability as auxiliary indicators (Table 5). We also utilized the dry hot wind zoning indicators to carry out analytical study using iterative addition and produced our nation's first climatic zoning of dry hot winds affecting wheat.

We now use the high temperature and low humidity type as the main type to divide the area damaged by dry hot winds in the northern wheat regions into nine zones differentiated by the four levels of severity severe, less severe, slight and none (Figure 4). The greening after rain and withering type needs further study.

Table 5. Zoning Indicators for Climatic Zones of Dry Hot Winds

Indicator \ Zone	I Severe Zone	II Less Severe Zone	III Slight Zone	IV None Zone
Annual average number of days of dry hot winds (day)	≥6 severe days ≥2.5	3 - 5.9 severe days 0.5 - 2.4	1 - 3 severe days <0.5	<1
Annual average number of times of occurrence of the weather process of dry hot winds	≥1.6 number of severe occurrences ≥0.5	1.0 - 1.5 number of severe occurrences 0.2 - 0.5	0.5 - 1.0 number of severe occurrences <0.2	<0.5
10-year probability of annual types of dry hot winds	≥5	3 - 5	1 - 3	<1

(I) Severe zone: This includes the I zone in northern China, the Hexi Corridor and Xinjiang. The I zone of northern China includes central Hebei, southern Hebei, northern Henan, eastern Henan, western Shandong, northwestern Shandong and the Linfen and Houma areas. In this zone, the annual average number of days of dry hot winds is 5 to 11, the annual frequency is 20 to 30 percent, the average number of days of the concentrated period is 1 to 4, the number of days of duration of the process is mostly 2 to 4, the period of longest duration is 8 to 15 days. The number of occurrences of the dry hot wind process is over 1.5 to 2.0 times, the average number of occurrences of severe dry hot winds is 0.5 to 0.7 times and the probability of occurrences of a year of dry hot winds in 10 years is 5 to 7 times. The most severe dry hot winds occurred at Nangong, Daming, Xingtai and Handan in Hebei, Dezhou in Shandong, Jizozuo and Zhengzhou in Henan and Houma and Linfen in Shaanxi.

The I zone of the Hexi Corridor includes Dunhuang and Anxi Basin. The number of days of dry hot winds, the number of occurrences of the dry hot wind process, the probability of occurrence of a year of dry hot winds in 10 years in this zone are all the same as those in the I zone of northern China. The annual frequency is 10 to 15 percent. The number of days of concentrated occurrence in a 10-day period is 1 to 2 days. The number of days of duration is mostly 3 to 4. The most number of days of duration in Anxi is 10.

The I zone in Xinjiang includes the Turpan Basin and the Qarkilik and Tikanlik area of the Tarim Basin. The annual number of days of occurrence ≥5; annual frequency averages greater than 20 percent. At Toksun, the annual number of days is 19; the annual frequency is 62 percent. In Qakilik it is 10 days. The number of days of duration of the dry hot wind process is mostly 2 to 4, the longest duration lasts 17 days, and the annual number of occurrences of the

process is two to four times. At Toksun, the annual average is 8.1 times and at Qarkilik it is 6.9 times. The number of severe occurrences is >0.5 times. The probability of occurrence of a year of dry hot winds in 10 years is 6 to 10 times. The probability of occurrence of the severe annual type is three to five times in 10 years. At Toksun and Qarkilik it is 10 times in 10 years.

(II) Less severe zone: This includes the II zone in northern China, the eastern part of the Hexi Corridor and Xinjiang.

The II zone of northern China: This zone covers Tianjin except the part belonging to the I zone, the north bank of the lower reaches of the Huang He in western Shandong, southeastern Henan, western Henan, eastern Guanzhong, and the southern part of southeastern Shanxi. The annual number of days of occurrence in this zone is 3 to 5; the annual frequency is 10 to 15 percent; the number of days of concentrated occurrence within a 10-day period is 1 to 3; the number of days of duration of the process is mostly 2 to 4; the number of days of the longest duration is 5 to 9; the number of occurrences of the process is less than 1.5 times; the number of severe occurrences is less than 0.5 times; the probability of occurrence of a year of dry hot winds in 10 years is three to five times; the probability of occurrence of the severe type in 10 years is 1 to 1.5 times.

The II zone of the Hexi Corridor: This includes Zhangye, Wuwei and Minqin in the eastern part of the corridor. The annual number of days of occurrence is 3 to 5; the annual frequency is 5 to 10 percent; the number of days of concentrated occurrence in a 10-day period is 1 to 2; the number of days of duration of the process is 3 to 4; the number of days of longest duration is 5 to 10; the average annual number of occurrences of the process is 0.5 to 1.5 times; the number of severe occurrences is 0.1 to 0.3 times; the probability of occurrence of dry hot winds in 10 years is three to five times; the probability of occurrence of the severe annual type in 10 years is one to two times.

The II zone in Xinjiang: This includes Hami, Tarim Basin and Junggar Basin. The annual number of days of occurrence, the annual frequency, the number of days of duration in this zone are the same as those in the II zone in northern China, but the annual number of times of occurrence of the process is one to two times, and the number of times of severe occurrence is 0.3 to 0.7 times. The probabil- of occurrence of a year of dry hot winds in 10 years is four to six times. The probability of occurrence of the severe type in 10 years is two to four times.

(III) Slight zone: This includes the III zone in northern China, Hetao and Xinjiang.

The III zone in northern China: This includes northern Hebei, western Shanxi, the central and northern parts of southeastern Shanxi, the dry plateaus north of the Wei River, southern Shandong, the northwestern part of the Jiaodong Peninsula, northern Jiangsu, and northern Anhui. The annual number of days of occurrence is 1 to 3; the annual frequency is 5 to 9 percent; the number of days of concentrated occurrence is 1; the number of days of duration of the process is mostly 1 to 2; the annual number of times of occurrence is 0.5 to 1.0 times; the number of severe occurrences is 0.1 to 0.3 times; the probability of occurrence of a year of dry hot winds in 10 years is one to two times.

The III zone of Hetao: This includes the Ningxia and Hetao irrigated regions. The annual number of days of occurrence is 0.5 to 2; the annual frequency is 2 to 6 percent; the number of days of concentrated occurrence within a 10-day period is 0.4 to 1; the number of days of duration of the process is mostly about 2; the longest duration at Dengkou reaches 5 days; the annual number of occurrences of the process is 0.2 to 0.6 times; the probability of occurrence of dry hot winds in 10 years is one to three times.

The III zone in Xinjiang includes the western part of the Tarim Basin and the outskirts of the Junggar Basin. The annual number of days and the number of days of duration are the same as those of the III zone in northern China. The annual frequency in southern Xinjiang is 10 to 15 percent and less than 10 percent in northern Xinjiang. The annual number of occurrences of the process is 0.3 to 1.1 times; the probability of occurrence of dry hot winds in 10 years is 0 to 3 times.

(IV) The none zone: This includes the outskirts of the slight zones. In the northern China region and the Fen Wei valley, this zone is marked out by Qinling, the Huai River, the Great Wall and the northern part of the Wei River as the southern and northern borders. In the Hetao region, it is marked out by Yingshan and Helanshan. In the Hexi Corridor, it is marked out by Qilianshan and the desert. In Xinjiang, it is between the Altay Mountain and Tianshan, and Tianshan and the low hills of the Altay Mountain.

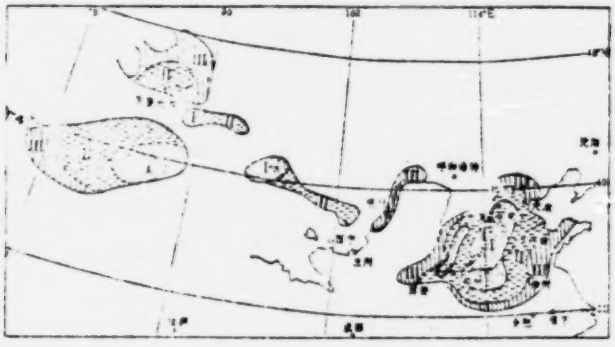

Figure 4. Map of Climatic Zones of Dry Hot Winds in the Northern Wheat Regions

V. Suggestions for Measures To Prevent Dry Hot Winds

1. Implementing reform of agricultural techniques and elevating the level of scientific planting are a fundamental measure of defense against dry hot winds. In the concentrated wheat producing regions affected by dry hot winds, water conservancy projects should be built, conditions for irrigation should be developed, soil must be improved, field management should be strengthened and various comprehensive agricultural techniques and measures should be implemented in the defense against damage by dry hot winds.

2. Building protective forests has a beneficial effect upon regulating microclimates in the fields and upon improving the ecological environment and defending against dry hot winds. According to experiments, the wind velocity of weather processes of dry hot winds in square fields protected by a forest network is less than that in open farmland by an average of 40.9 percent, the temperature at 1400 hours is lower by 2°C and the relative humidity increases 9 percent. In the concentrated wheat producing regions of the Guanzhong Plain and the Fen River Basin seriously affected by dry hot winds, building of protective forests should be uniformly planned to gradually realize the goal of protecting farmland by forest networks. Building of protective forests in Hetao, the Hexi Corridor and Xinjiang should be coordinated with that in the three northern regions so as to do the work of building a protective forest network in the farming and irrigated regions well.

3. Northern China, the Huang He and Huai River plains, and the Fen-Wei Valley are regions of concentrated winter wheat production. According to climatic analysis, 60 to 90 percent of the dry hot winds in these regions are concentrated between the end of the last 10 days of May to the first 10 days of June. Each locality can spray an ash solution, dihydropotassium phosphate and solutions of petroleum growth stimulants manually or by airplane, irrigate to prevent yellowing or use calcium chloride to soak the seeds before the occurrence of dry hot winds when forecasted by the local meteorological stations. These measures are effective measures of defense. Results of joint experiments of many localities show that the above measures have a definite effect in reducing the damage by dry hot winds and increasing the thousand grain weight and yield of wheat.

4. Selective breeding and popularization of high yielding superior varieties of wheat that resist dry hot winds are effective measures in the defense against dry hot winds. Wheat varieties have different climatic ecological types. According to surveys, generally, after introducing a variety from a region severely affected by dry hot winds to a slightly affected region, that variety's resistance to dry hot winds is better; conversely, it is worse. At the same time, attention should be paid to selectively breeding high yielding superior varieties which "avoid" the period of concentrated occurrence of dry hot winds of the locality.

9296
CSO: 4007/559

WAYS OF IMPROVING HYBRID RICE SEED PRODUCTION DESCRIBED

Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 5, 17 May 81 pp 2-3

[Article by Lou Xirang [1236 1585 4363], Chinese Academy of Agricultural Sciences: "Make a Success of Hybrid Rice Variety Breeding and Seed Production"]

[Text] Many localities have now made a start in establishing a set of relatively complete hybrid rice breeding [i.e., maintenance of breeders' stock] and seed production systems, have trained a technical contingent, and have designated the procedures for producing the "three varieties" in pure form as well as procedures, quality standards and a system of rewards and penalties for breeding and seed production, which have led to rather good results. Sichuan province has adopted the method of concentrating its technical contingent for seed production on successive plots [lian pian 6647 3651], and its output has gradually increased; in 1977 the average seed production yield was only 26 jin, while in 1979 it had risen to 98 jin, and in 1980, when seed production acreage had reached 210,000 mu, the yield also made a considerable jump, so that certain counties were averaging 200 jin per mu and certain brigades 300 jin per mu. In order to increase the quality of hybrid rice seeds, in 1980 Fujian Province allocated 250,000 yuan for maintaining the purity of the "three varieties" and set up 17 seed variety purification and revitalization stations throughout the province for the purpose of providing relatively good pure varieties of the "three varieties" to the various counties. But in some localities breeding and seed production is in bad shape, the various technical measures have been poorly implemented, or there is even low seed output and serious mixing and degeneration: the general mixing rate [hun za lyu 3236 7177 3764] is over 5 percent, in some cases it is about 20 percent, and in a few serious cases it exceeds 40 percent. Experimental results indicate that each drop of 1 percent in the purity of the F_1 generation decreases per mu yield by 8 to 12 jin, and when the mixing rate is 10 percent or more the increased yield advantages of hybrid rice are essentially lost. Accordingly, effective purification and revitalization work with hybrid rice is a critical matter. If we allow mixing to proceed unchecked, hybrid rice outputs and further progress will both be negatively affected.

How can effective purification and revitalization of hybrid rice be effected? Widespread experience indicates that we should concentrate on the following points:

1. Create a well-developed breeding and seed production system. Several years' experience shows that the system in which the breeding [i.e., maintenance of breeders' stock] is done at the county level (production of the pure "three strains"), seed production is done at the commune level (concentrated seed production on successive plots), and the seeds are cultivated at the brigade level is not only effective in isolation of varieties and prevention of mixing, but also helps to strengthen leadership and provide unified management and makes it possible to pass on techniques and train personnel so as to assure seed quality and quantity. Starting from its actual situation at the time, Guangxi Province set up three integrated hybrid rice seed production companies in Beiliu and Bobai Counties and Mabo Commune, Luchuan County; this was a good approach to concentrating hybrid rice seed production in base locations, specializing it and standardizing it. Using existing seed production stations and bases, the province implemented a unified program, operation on the basis of advance orders, level-by-level accounting, and individual unit responsibility for profits and losses. The county seed companies and other relevant bodies took on the work of technical leadership, commodity supply and seed procurement, management and sales, as well as seed allocation, supply of rations to the bases and the like. In the first year, units needing seed placed orders for specific quantities and drew up purchase agreements with the seed supply bases, and the "three guarantees" were implemented for the seeds (guaranteed purity according to standards, guaranteed germination rate according to standards, and guaranteed on-time provision of seeds), thus avoiding a disproportion between production and sales or blind production.

2. Further improvement of purification and revitalization of the "three strains." Other rice varieties (particularly sterile-free lines) have been mixed with hybrid rice varieties in the process of sowing, transplanting, harvesting, drying and storage, or because of ineffective isolation, natural crosses have been produced or spontaneous mutations have occurred, all of which can lead to mixing and degeneration. Accordingly, while developing hybrid rice, it is necessary to accord full importance to purifying and revitalizing the "three strains." Some provinces, municipalities and autonomous regions have proceeded on the basis of their own specific conditions and have set up programs and procedures for purifying and revitalizing seed strains; these must be strictly carried out and continuously generalized and improved through practice, by simplifying procedures and shortening cycles so that it will be easy to put them into more extensive use.

The work of purifying and revitalizing the "three strains" is highly technical, involves a large amount of work with a wide variety of procedures and stringent requirements, and must be undertaken by persons with a strong sense of responsibility, a good inquiring spirit and a meticulous approach to work. In addition, continuity must be maintained so as to provide the opportunity for learning and making improvements. The cognizant departments should furnish material and financial support and should resolve reasonably the problems of compensation, insurance and benefits for the people engaged in the work, as well as providing political and economic incentives so that they can concentrate on their work and devote themselves to purifying and revitalizing the "three strains."

3. Some seed production techniques:

a. Choose seed production seasons in terms of local conditions. For successful seed production, thought should be given to arranging for the flowering periods of the parent plants to coincide under suitable conditions, and every effort must be made to avoid excessively high or low temperatures, dry weather, heavy rains and the like. In this connection, many localities have already worked out such approaches as spring breeding and summer production, spring breeding and fall production, fall breeding and fall production, two-season per year of breeding and two-season per year of production and the like on the basis of their own natural conditions. Some mountain districts at relatively high altitudes have fluctuating air temperatures in the period preceding early rice seed production, and it is impossible to assure full heading in late season seed production; accordingly they have adopted the approach of propagating intermediate-season rice, which enables them to assure full earing and makes possible high yields, as well as allowing them to fit the production season in between the flowering seasons of other rice varieties, so that they can avoid mixing of strains and maintain purity, can allocate labor effectively and can achieve the goal of high output and good quality; in the case of parent varieties with relatively short reproductive periods, autumn seed production may be used if the economic results seem to favor it.

b. Effective and reliable isolation measures. Reliable isolation is the key to preventing mixing and maintaining purity. There are many methods of isolation, and experience shows that natural isolation gives very good results: no pollen should be disseminated in areas within 50 meters downwind or 100 meters upwind of the plants in question. Time isolation requires that the flowering periods of plants in breeding plots and seed production plots be staggered by about 28 days from the flowering periods of surrounding rice varieties. The physical isolation method involves maintaining a distance of at least 30 meters between seed production or breeding plots and other rice varieties. In the past, some seed production localities used plastic sheeting, hemp stalks or grass mats as physical barriers around breeding or production plots, but since they were not tall enough and the distance was not great enough, their effectiveness was very poor; this method should not be used. Varieties of restorer lines currently being used in production generally have good economic properties and accordingly they may be planted all around the seed production plots to act as a barrier. This method may also have the effect of expanding the sources of male parent pollen. The above isolation methods should be used in keeping with actual conditions; it is best to use several methods in combination.

In order to prevent mixing and maintain purity, it is also necessary to prevent mixing of varieties between the seedbed and the main field. Harvesting is the last stage of breeding and seed production, but it is also a process in which mechanical mixing can easily occur, and accordingly it is necessary to practice timely reaping, effective seed separation, cleanliness in harvesting and threshing, and prevention of mixing in drying and storage.

c. The problem of triply-staggered male parent seed production. In order to assure coincidence of flowering times and to assure high stable yields in seed production, Guanqian Commune, Youxi County, Fujian Province has implemented the triply-staggered male parent propagation method. In two years' of trials it has achieved rather good results, in particular, units which lack seed production experience or which are testing new combinations may wish to consider it.

8480
CSO: 4007/496

BRIEFS

WHEAT OUTPUT--Hefei, 23 Sep (XINHUA)--The 16 million peasants in Huaibei area in Anhui have reaped another bumper harvest of wheat on their 18.04 million mu of wheat acreage this year. With average per mu output exceeding 300 jin for the first time in the prefecture, the total wheat output this year is 1.75 billion jin more than in 1980 and 866 million jin more than in 1979, the previous peak year. Because of the high output, each peasant in the prefecture gets an acreage of 280 jin of wheat as food ration, or enough fine grain for 6 months, consumption, thus ending the 31-year situation of sweet potatoes being the main staple of peasants in the prefecture. [Beijing Xinhua Domestic Service in Chinese 0050 GMT 23 Sep 81 OW]

CSO: 4007/1

INCREASE IN TEA PRODUCTION, EXPORTS IN FUJIAN

Beijing GUANGMING RIBAO in Chinese 10 Aug 81 p 1

[Article by Lin Guitang [2651 2710 6974] and Chen Youren [7115 2589 0088]: "Implementing Scientific Planting of Tea; Popularizing Superior Varieties of Tea Leaves--Fujian Tea Production and Exports Increase Greatly"]

[Text] A broad number of tea plantations in Fujian Province have implemented scientific planting of tea and popularized superior varieties of tea leaves, and as a result the yield and exports of tea have increased relatively greatly. This year, over 250,000 dan of spring tea were harvested. Tea farmers have already sold to the state over 195,000 dan of tea to support the needs of domestic markets and exports.

Fujian Province is situated in the subtropical zone, the climate is mild, rainfall is abundant, the entire province has over 100 million mu of mountainous land, and there are many low mountains, gentle slopes, and hilly areas. Since the Third Plenum of the 11th Party Central Committee, the party committee at each level in Fujian Province has paid attention to developing the superiority of tea production, thoroughly implemented related policies and guidelines of the party, and grasped the development of tea production as an important undertaking. One important measure was to develop further the Tea Research Institute of the provincial Academy of Agricultural Sciences and its function as the basis for scientific research of tea. The institute has continued to do well the work of gathering information on the resources of tea varieties and the breeding of superior varieties, their research, and their popularization. Up to now, it has gathered and preserved 418 varieties of tea trees from abroad and from our nation. Thus it has come to acquire the largest number of tea varieties and relatively complete tea varieties and various qualities of tea in the entire nation. It has also continuously supplied superior quality tea tree seedlings to the various tea planations throughout the province. At the same time, it has introduced new experiences in the breeding of tea, control of insects, rebuilding of tea plantations, cultivation to produce bumper harvests, and mechanized tea production at the various tea plantations, so that research results have become productive forces in a timely way. To do a good job of the work of scientific planting of tea, the tea research institutes in the two key tea-producing regions of Chongan County and Anxi County have been revived or newly built. They have delved deeply into the research of the famous "da hong pao" tea of Wuyiyan and the "tie guan yin" of Anxi. A number of bases have been established for the cultivation of superior varieties of tea; among them, 11 are under the direct jurisdiction of the province. In recent years, they have provided over 500 million superior young tea plants to the tea plantations throughout the province. This has increased the area planted in superior varieties of tea--now constituting nearly one-half the total area of tea plantations.

9296
CSO: 4007/566

BRIEFS

MUSHROOM MEETING--A provincial conference on mushroom production was held by the provincial people's government in Fuzhou from 17 to 22 September. More than 140 people attended the meeting, including leading comrades of Fuzhou, Xiamen, Putian, Jinjiang, Longxi and Longyan and some major mushroom-producing counties. The meeting pointed out that Fujian accounts for 45 percent of China's total canned mushroom export, and that mushroom export accounts for one-eighth of the province's total export foreign exchange earnings. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 24 Sep 81 OW]

CSO: 4007/1

FOSHAN WORKS TO OVERCOME CROP LOSSES FROM RAINS

Guangzhou NANFANG RIBAO in Chinese 30 Jul 81 p 1

["Undiscouraged by Reduced Yields, Resist Disasters To Seize Bumper Harvests; People in Foshan Prefecture Enthusiastically Enter Into Late Crop Production"]

[Text] Each level of the party organization of Foshan Prefecture and the people's government have actively led the masses to do the work of late crop production well. They have insisted on resisting disasters to seize bumper harvests and are striving to make up for the loss of the early crop due to disasters. Up to the 27th of this month, the entire prefecture had prepared over 3 million mu of fields, constituting over 70 percent of the total area of late rice, and 100,000 mu of seedlings had been transplanted. At present, the entire region is grasping tightly the opportunity to transplant late rice.

From 29 June to 27 July 5 over 600 millimeters of torrential rain fell on Foshan Prefecture. The county with the highest amount of rainfall registered over 1,000 millimeters. Because of the continuous attacks by typhoons and torrential rains, the ripened early rice in more than 2 million mu throughout the region was soaked, causing a reduced yield, Over 200,000 mu of sugarcane were submerged, over 100,000 mu of fishponds were submerged, and some water-conservancy projects were damanged. Because of the abundance of rainwater and the high humidity, large numbers of pachydiplosis oryzae and tryporyza incertellus occurred in the late crop seedbeds, affecting late crop production relatively greatly.

Faced with this situation, the party organizations at each level in Foshan Prefecture and the people's government launched the masses to overcome natural disasters with the spirit of the Sixth Plenum as the driving force to produce the late crop well and to strive to make up the loss of the early crop due to disasters. The Foshan Prefectural Party Committee and the administrative office of the prefecture appropriated over 400,000 yuan, 2,000 tons of cement, 1,000 tons of diesel fuel, and 100 cubic meters of timber to support the disaster area and revive production. They also organized 23 work groups to go to each county and commune to grasp well the work of resisting disasters and rescue work together with the local cadres and masses, and to rapidly revive production. To realize a bumper harbest of the late crop, they emphasized grasping well the following key measures.

1. Cultivate seedlings well, and popularize hybrid paddy rice. Faced with the poor quality of the seedlings of the late crop and an abundance of diseases and

insect pests, they did a good job of applying fertilizers and controlling insects. At the same time, they grasped planting hybrid paddy rice well as an important measure to realize bumper harvests of the late crop. The whole prefecture plans to plant more than 400,000 mu of hybrid rice as the late crop.

2. Grasp the seasons well. Because of the effects of the weather, transplanting of the late crop was carried out 5 to 7 days later than last year throughout the entire prefecture. To make up for the lost time, each locality implemented the method of using plows, rakes, and tractors according to the "three quotas and one reward" (quota for time, quota for task, set quality, and reward for surplus). Various transplanting field meetings were held to popularize advanced experience and to hasten the progress of preparing the fields and transplanting.

3. Prepare sufficient fertilizers. The prefecture organized over 5,400 tons of superior-quality chemical fertilizers to support the disaster areas. Each county and commune also conscientiously grasped well the work of returning stalks to the fields, and the "three vines" were returned to the fields. Now the whole region has applied organic fertilizer to 3 million mu of the ricefields, constituting 70 percent of the total area.

9296
CSO: 4007/573

PROCUREMENT PRICES INCREASED FOR BEANS, OIL

Guangzhou NANFANG RIBAO in Chinese 1 Aug 81 p 1

[Article: "Our Province Decided to Increase Procurement Price for Beans; Prices of Soybeans and Oil Supplied to the Residents of Towns and Cities Unchanged"]

[Text To stimulate the development of the production of beans, the concerned leadership departments of the province have decided to increase the procurement prices for soybeans, oil and dark red beans, mung beans, phaseolus lunatus, pole beans, and such miscellaneous beans beginning 1 August. The procurement price for soybeans (including yellow soybean, black soybean, green soybean, brown soybean) is increased from the current unified price of 25 yuan per 100 shi jin to 37 yuan 5 jiao. The procurement price for oil and the procurement price for miscellaneous beans and the sales prices are also readjusted correspondingly. While readjusting the procurement prices for beans, the added price for surplus procurement of beans and oil has been abolished. But to take care of the benefits of the producers, the foodstuffs department will continue to implement the current practice of rewards for sale when procuring soybeans. Each farmer who submits 100 jin of soybeans for sale can use this to substitute for the procurement of 120 jin of rice, and another 40 jin of nitrogenous fertilizer (ammonium sulphate) will be awarded.

Even after the procurement prices for soybeans and oil are increased, the sale prices of soybeans and oil supplied by the state's foodstuffs departments to the workers and residents in cities and towns will not change. Circulating soybeans, exchanges of varieties, supplies of seeds, rewarded soybeans, beans for feed re-sold back to the farm villages, and soybeans and oil supplied to farm villages will be sold back to the villages at the same procurement and sales prices.

9296
CSO: 4007/573

RECORD OUTPUT OF SPRING-PLANTED PEANUTS, OTHER CROPS

Guangzhou NANFANG RIBAO in Chinese 9 Aug 81 p 1

[Article: "Our Province's Spring-Planted Peanuts Produce Bumper Harvests; Total Yield Registered an Increase of 6.9 Percent Over That of the Same Period Last Year, Which Was the Highest Level in History; This Year Our Province's Corchorus Capsularis and Hibiscus Cannabinus Realized Increased Yields"]

[Text] Our province's spring-planted peanuts for this year have been completely harbested. The total yield has reached 9.12 million dan, an increase of 6.9 percent over that of the same period last year, which was the highest level in history. The increases in the major producing regions of Zhanjiang, Huiyang, and Shantou were all over 10 percent.

Since the beginning of this year, our province's farm villages and regions suited measures to local circumstances, readjusted the distribution of agricultural production, and continued to popularize the effective planting system of "rotation planting of peanuts and paddy rice," The sowing area of spring-planted peanuts throughout the province increased by 300,000 mu over the same period last year. Each locality conscientiously popularized the superior varieties, sowed timely, applied sufficient base manure, strengthened management, overcame such unfavorable factors as drought during the early period of growth and an abundance of rain during the later period of growth, and thus realized a bumper harvest. The major production base of peanuts in our province, Jibai County, implemented the production responsibility system of "contracting work to the families," and the enthusiasm of the commune members to plant peanuts was high. The entire county planted 220,000 mu of spring peanuts, an increase of 40,000 mu over the same period last year. Total yield increased by more than 20 percent over the same period last year.

According to statistics of concerned departments, the total yield of corchorus capsularis and hibiscus cannabinus in our province this year registered an increase of more than 160,000 dan over last year--an increase of 8.6 percent.

This year, the provincial people's government implemented the measure of subsidizing 5 yuan of the price of each dan of corchorus capsularis and hibiscus cannabinus. The bast-fiber regions of each locality widely implemented the various forms of the production responsibility system and fully mobilized the enthusiasm of the broad number of farmers to plant bast fiber. This year, the area of superior varieties of corchorus capsularis and hibiscus cannabinus is larger, sowing was

carried out better than in past years, management during the seedling period was more timely, and with the addition of the popularization of the various measures to increase production, increased yields were realized. Average yield per mu reached 493 jin, an increase of 13 jin per mu over that of the same period last year, which was the highest unit yield. Huazhou County is our province's major production region for corchorus capsularis and hibiscus cannabinus. This year, the entire county planted 100,000 mu of corchorus capsularis and hibiscus cannabinus, and the total yield increased 20 percent over last year.

9296
CSO: 4007/573

LATE RICE TRANSPLANTING BASICALLY COMPLETED BY 7 AUGUST

Guangzhou NANFANG RIBAO in Chinese 11 Aug 81 p 1

[Article: "Strive for Bumper Harvests of the Late Crop To Make Up for Loss of Early Crop; Transplanting of Late Rice Crop Has Basically Been Completed in Our Province:]

[Text] Encouraged by the spirit of the Sixth Plenum, our province's broad numbers of cadres and masses in the farm villages have conscientiously done the work of summer transplanting and summer planting well in order to strive toward the realization of a bumper harvest of the late crop. Up to "the beginning of autumn" (7 August), the entire province had transplanted a total of 24,874,000 mu of late rice, constituting 79 percent of the planned area; this is 1,744,000 mu more than in the same period last year. Sweet potatoes, peanuts, and soybeans have been planted in 3,745,000 mu, over 172,000 mu more than in the same period last year. Meixian Prefecture had completed the overall transplanting plan by 7 August and is now turning to field management.

The harvest of food grains of the early crop was poor in most areas this year because our province suffered continuously from such natural disasters as typhoons, rainstorms, disease, and insect pests. Therefore, each region paid attention to helping each commune and brigade implement planting plans for the production of the late crop, and more food grain crops were planted. Shantou Prefecture widely popularized the companion planting of sweet potatoes in peanut fields and the interplanting of soybeans in sweet potato fields, and increased the rate of land utilization. At the same time, the seasons were grasped tightly in order to seize transplanting and seize sowing, and the quality of plowing and harrowing the fields and of fertilizer was grasped well. Shantou Prefecture turned deeply and repeatedly plowed over 70 percent of the late rice fields. Zhanjiang Prefecture returned stalks to an area constituting about 80 percent of the total area of late-rice fields.

Faced with the situation of frequent disease and insect pests in the early crop and the large area of occurrence of diseases and insect pests in the seedbeds of the late crop, each locality grasped the work of preventing insects and eradicating diseases in seedbeds as an important measure for seizing bumper harvests of the late crop of food grains. Foshan, Guangzhou, and Zhaoqing widely popularized the application of "accompanying insecticides" before transplanting and soaking seedling heads to destroy disease and insect pests in the seedbeds, and then exerted

every effort to transplant healthy seedlings. Shantou Prefecture disinfected the soil of over 800,000 mu of land left by the early crop affected by rice blast. The pathogenic bacteria remaining in the soil were destroyed. Each locality also implemented various methods to increase the level of scientific planting by the farmers in the new situation created after implementation of the joint production responsibility system. Huiyang Prefecture widely implemented the practice of "Contacting families" and used joint production families and the demonstrative functions of these farm families to lead the broad ranks of farm families to do a good job of scientific planting.

9296
CSO: 4007/573

BUMPER RICE HARVEST IN CHAOAN COUNTY DESPITE DISEASE

Guangzhou NANFANG RIBAO in Chinese 14 Aug 81 p 1

[Article: "Chaoan County Popularizes Knowledge of Agricultural Science Among Families in This Year of Big Outbreak of Rice Blast; Its Spread Was Controlled, and the Early Crop Produced a Big Bumper Harvest"]

[Text] The early crop in Chaoan County produced a large bumpter harvest in this year of a big outbreak of rice blast. Although the area planted in early rice was less than that of the same period last year by over 14,100 mu, because of the readjustment of the distribution of production throughout the county, the unit yield reached 810 jin--an increase of 68 jin over the same period last year. The total yield still reached over 239 million jin, an increase of 4.2 percent. The unit yield and the total yield surpassed the highest levels in history.

This year has seen the second largest outbreak of rice blast since liberation. The reasons for the big outbreak were as follows. One, the major varieties of early rice, "gui chao" and "qing er," have been popularized for many years, and they are easily affected by the disease. Two, there is a historical area of the disease. Three, nitrogenous fertilizers were overly applied and the seedlings were tender. Four, drought occurred during the early growth period, during the middle growth period the weather was continuously damp and cold, while during the latter growth period there were rain and floods, causing the rice blast to spread easily. Also, 60 percent of the production teams throughout the country implemented contracting production to the worker and contracting work to the family. Most of the commune members of these production teams were unfamiliar with planting techniques and did not know how to control such a serious disease. Faced with this situation, the Chaoan County Party Committee and the county people's government paid a great deal of attention to developing the function of agricultural departments and agricultural technical personnel, relying on them to analyze the production trend of early rice; they daringly used measures of scientific cultivation that suit the actual situation in Chaoan; and they passed on the knowledge of agricultural science to the families. The meetings of the secretaries of the communes called by the county communes and the meetings of the party branch secretaries of the brigades planned production and allowed agricultural technical personnel to explain techniques. The county commune radio station also invited agricultural technical personnel to lecture over the radio. Some brigades and production teams that have implemented contracting production to the families took the initiative to hold meetings of heads of household the commune technical station was invited to dispatch personnel to lecture on

techniques, and other commune members came to listen. Some commune technical stations also contacted farm families and conducted demonstrations of agricultural techniques, which they could then pass on to other farm families. In addition, the county committee held two training classes in techniques for brigade leaders, and training courses were given to all 530 brigade leaders. The key was to learn about the scientific use of fertilizers and the prevention of diseases and insect pests. They have served greatly in seizing bumper harvests of early rice.

Because of the implementation of these measures, the area of occurrence of rice blast during this year's early crop was controlled within an area of some 50,000 mu, and the loss was no worse than last year's. During last year's early crop, the entire county had only 11 brigades producing 1,000 jin per mu. This year, the number of brigades producing 1,000 jin per mu dramatically increased to 65.

9296
CSO: 4007/573

EARLY RICE INCREASE IN ZHANJIANG PREFECTURE

Guangzhou NANFANG RIBAO in Chinese 18 Aug 81 p 1

[Article by Lan Yuankuan [5663 3633 1401] and Zhang Qingjin [1728 3237 6975]: "Grasping Key Measures on the Basis of the Rise in the Enthusiasm of the Masses; Zhanjiang Prefecture Produces Increased Yields of Early Rice Because of the Planting of Hybrid Rice"]

[Text] This year's early crop in Zhanjiang Prefecture realized bumper harvests although there were frequent natural disasters. One important reason was the popularization of hybrid paddy rice. What is the situation with regard to planting hybrid rice (also called superior hybrids) in this prefecture, and what is the trend for future development? Recently, we visited the responsible comrades of the agricultural departments of the prefecture and asked them to introduce us to the situation.

The responsible comrades of the agricultural departments of the prefecture said: The situation with regard to popularizing hybrid paddy rice during the early crop is good. The total area of the early crop of paddy rice in the entire prefecture cofers over 830,000 mu; hybrid paddy rice covers over 700,000 mu. The 13 counties and cities (suburbs) of the entire prefecture have all popularized hybrid paddy rice. The results of the harvests show that the ordinary areas of hybrid paddy rice produced a unit yield of over 100 jin more than ordinary varieties of paddy rice, with highs reaching 300 to 400 jin. We can say that hybrid paddy rice has served greatly to increase the yield of this year's early crop by over 100 million jin. Over 290,000 mu of hybrid paddy rice were planted as the early crop this year in Gaozhou County; this is 60 percent of the total area. Although this county encountered drought during the early growth period, low temperatures during the middle growth period, and overly abundant rain during the latter growth period and such unfavorable weather, and although the area of early rice was 10,000 mu less than in the previous year, the summer harvests of hybrid paddy rice still registered an increased yield of 20 million jin over the same period of the previous year. Last year, the early crop of hybrid paddy rice in Yangchun County was less than 1,000 mu. This year, the early crop was planted on more than 67,000 mu. The area of popularization increased several dozen times. They readjusted the distribution of production and reduced the area of paddy rice by 17,000 mu for this crop, but the total yield of rice grains still registered an increase of more than 31 million jin over last year. In general, practical results show that popularization of hybrid paddy rice has given the agricultural production of Zhanjiang Prefecture many benefits. The more outstanding benefits are as follows: It has greatly

increased the unit area yield; it has promoted the readjustment of crop distribution; part of the land can be freed for planting economic crops; it has hastened the rate of change in low-yielding regions; and it has advanced the popularization of agricultural science and technology. Many comrades said: Planting hybrid paddy rice has led the whole situation forward.

When talking about the future trend of development of hybrid paddy rice, the responsible persons of the agricultural departments said: Because of the success of planting superior hybrids in the early crop, the strength of growth of the late crop at each locality has become greater. In the regions that have experience in planting hybrid paddy rice, such as Gaozhou, Huazhou, and Xinyi counties, the areas of hybrid paddy rice plantings in the late crop this year have all expanded. Last year, Yangjiang County's late crop covered only somewhat over 120 mu, while this year's late crop covered about 70,000 mu. Haikang County had only several dozen mu of late crop last year; this year's late crop covered 100,000 mu.

Of course, the popularization of a new variety is not always smooth. No matter what, the local party committees and the county party committees in each county saw this and decided to grasp it. According to the demands of the prefectural party committee, the area of hybrid paddy rice will undergo an even greater development next year and the year after. It will be carried out for 3 or more years so that the increased yield of food grains can be greater. In this way, more land can be freed to plant economic crops so that the broad numbers of farmers can have food grains and money and become rich quicker. Now we are thinking of ways to concretely solve some problems and thus to strive toward bumper harvests of the late crop of hybrid paddy rice. The main problems are: first, strengthening technical guidance; second, providing material assurances, especially supplying nitrogenous fertilizers and potassium fertilizers on time; and third, grasping seed propagation more tightly in order to prepare for large-scale popularization of hybrid paddy rice next year.

9296
CSO: 4007/573

BRIEFS

DROUGHT IN GUANGXI--Guilin Prefecture has actively fought against drought to protect seedlings. Since the beginning of autumn, temperatures have been high in Guilin Prefecture and there has been very little rainfall, thus adversely affecting the growth of late rice and dryland crops. As soon as the drought situation became apparent, the leadership at all levels in Guilin Prefecture immediately mobilized the cadres and masses and adopted active measures to fight drought. Up until now, the prefecture has irrigated over 95,000 mu of mid-season and late rice seedlings. [HK161242 Nanning Guangxi Regional Service in Mandarin 1100 GMT 9 Sep 81 HK]

CSO: 4007/1

AFFORESTATION PROCEEDING WELL DURING RAINY SEASON

Shijiazhuang HEBEI RIBAO in Chinese 6 Aug 81 p 1

[Article by Peng Chuntai [1756 2504 0669]: "Implement Production Responsibility System in Forestry--Afforestation Throughout the Province During the Rainy Season Has Reached Over 450,000 Mu"]

[Text] Up to the end of July, this year's statistics show that over 455,700 my have already been afforested throughout the province during the rainy season. During the summer, over 23,200 mu of forest seedlings have been cultivated, and afforestation and preparation of land covered over 131,000 mu.

This spring, because of severe drought, each locality in the whole province completed less in afforestation and cultivation of seedings. But "that which was lost in spring was made up for in the rainy season." Starting prior to the arrival of the rainy season, each locality actively began to prepare the seedlings, transported seedlings, and prepared funds. Quyang County was a backward county in the past. This year, this county decided to make preparations early and start work early to do well the work of afforestation during the rainy season. Now, the whole county's afforestation task of 5,000 mu during the rainy season has been completed; the total area afforested amounts to over 7,000 mu, and over 120,000 jujubi trees have been planted. Some localities and counties also allocated capital to help communes and brigades in financial difficulties with their afforestation and cultivation of seedlings. Xingtai Prefecture provided over 50,000 yuan in capital to help communes and brigades purchase Chinese pine seeds.

In afforestation during the rainy season, each locality paid attention to establishing authority over the forests and implementing the production responsibility system in forestry. Shijiazhuang Prefecture held a meeting to exchange experiences in the determination and the issuance of proof of authority over forests before afforestation during the rainy season began, as a means to correct the prefecture's deeper leftist influence. Emphasis was placed on delegating private mountains and responsibility for mountains. The Yixian County Party Committee further liberated ideology through learning the spirit of the Sixth Plenum; whereas the original regulation had limited the number of private mountains to only 10 percent of the waste mountains suitable for afforestation, this limit was increased to 20 percent. Where conditions permit, more can be zoned. Now, 60 percent of this county's private plots have been afforested.

To assure quality and quantity in completing the summer's forest seedling cultivation task, many localities and counties practiced the method of walking on two legs in management by the state and the people, and seedling cultivation contracts were signed at each level.

9296
CSO: 4007/562

BRIEFS

COTTON PROCUREMENT--Hubei Province has reaped a good cotton crop from 8 million mu of cotton fields this year. As of 15 September 687,659 dan of new cotton had been procured in the province, an increase of 75 percent over the same period in 1979 which was also a good year. [OW231453 Beijing Domestic Service in Mandarin 1200 GMT 20 Sep 81 OW]

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BRIEFS

COTTON PROCUREMENT--By 20 September Xuzhou Prefecture of Jiangsu Province had procured some 91,000 dan of new cotton, 7.5 times as much as in the same period of last year. This year the prefecture grew 700,000 mu of cotton, which ripened earlier than usual. [OW261445 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 25 Sep 81 OW]

CSO: 4007/1

STATE PLAN FORMULATED TO CONTROL SOIL EROSION IN JIANGXI

Beijing GUANGMING RIBAO in Chinese 15 Aug 81 p 1

[Article: "State Agricultural Commission Organizes Scientific and Technical Personnel To Carry Out Typical Surveys; Plans Drawn Up for Overall Control of Water and Soil Loss in Xingguo County"]

[Text] GUANGMING RIBAO reporter Zhang Xiuping [1728 4423 1627] reports: Our nation's first county-level comprehensive water and soil retention zone has been established in Xingguo County, [Ganzhou Prefecture], Jianzxi Province. At present, a group of scientific and technical personnel are drawing up an overall plan to control water and soil loss in Xingguo County on the basis of the zoning report. A mass movement to struggle against nature that will gradually change the face of the homeland has thus begun.

Xingguo County was the revolutionary base of the central soviet region during the second revolutionary war period. The people here have made outstanding contributions to the Chinese revolution, under the leadership of the older generation of proletarian revolutionaries like Comrade Mao Zedong. But because of the destruction of the forests by long periods of war, and with the addition of the influence of leftist ideology after liberation, trees were felled without control and forests were destroyed for reclamation. Xingguo County became one of the regions of our nation's south that is suffering most seriously from the loss of water and soil. According to statistics, the loss of water and soil covers an area reaching 2.84 million mu, constituting 84.7 percent of the area of mountain land. Each year, 11 million tons of soil are lost. The ecological environment has gradually worsened, damage by drought and floods has become more severe, agricultural production has been seriously affected, and the people's life is poor; annual percapita income is only about 50 yuan.

Close to 100 scientific and technical personnel representing a total of 50 units of the Changjiang Valley Planning Office, the Nanjing Pedology Institute of the Chinese Academy of Sciences, the Huazhong Agricultural Academy, and water and soil preservation units, agricultural, forestry, and livestock production units, and water conservancy and meteorological units of the provinces, localities, and counties were organized and led by the State Agricultural Commission to Xingguo last July. They were divided into eight special groups specializing in soil erosion, geomorphology, etc, and they began the work of comprehensive zoning for water and soil preservation. They saw and heard the hard life of the people there, and this further stimulated their sense of responsibility to do well the work of zoning. The

scientific and technical personnel climbed mountains, crossed rivers, and went to all the villages and towns in Xingguo County to obtain firsthand information. The zoning report which they presented was reviewed by the relevant departments and specialists, and the first draft was completed in April of this year.

Through this zoning work, the agricultural resources of the soil, water conservancy, weather, and life forms in Xingguo and the productive situation were clearly understood; the causes, present situation, patterns, and damage by the loss of water and soil throughout the country were understood clearly; and experiences and lessons were summarized. The scientific and technical personnel also divided the entire county into nine zones, based on the types of erosion of soil, leaching, and the present situation of agricultural production. The direction of development of agricultural production in the future for each zone and the measures to control the loss of water and soil were pointed out, thus providing a scientific basis for the drawing up of a plan to comprehensively control the loss of water and soil throughout the county and to hasten the development of agricultural production.

While carrying out comprehensive zoning for water and soil preservation, the scientific and technical personnel of the Changjiang Valley Planning Office cooperated with the local scientific and technical personnel. They selected the small Tangbei Valley in Longkou commune, which is suffering severely from loss of water and soil, as the test locality for control efforts, and they combined engineering and biological measures and the simultaneous management of trees, shrubs, and grasses. The masses were mobilized to control over 2,300 mu of mountain land, and they planted 700,000 masson pine trees, nearly 60,000 economic forest trees, and some shrubs. This spring, scientific and technical personnel of Xingguo County went to Yongfeng and Longkou communes, where loss of water and soil is serious, to sow and afforest an area of 150,000 mu by plane.

9296
CSO: 4007/571

BRIEFS

FRUIT HARVEST--Qinghai Province expects a bumper fruit harvest this year. It is estimated that total fruit output will reach 30 million jin. The province has 2 million fruit trees. Provincial storage of fruits will reach 4 million jin, an increase of 1 million jin over 1980. [SK270707 Xining Qinghai Provincial Service in Mandarin 2330 GMT 26 Sep 81 XK]

CSO: 4007/1

WATER WITH HIGH SAND CONTENT USED FOR IRRIGATION

Xian SHAANXI RIBAO in Chinese 6 Aug 81 p 1

[Article by Xu Yian [1776 5030 1344] and Cheng Yonghua [4453 3057 5478]: "Utilizing Scientific Technology To Change the Harmful to the Beneficial; Luohuiqu Experiments With Drawing Water With High Sand Content for Irrigation"]

[Text] The Luohuiqu Administrative Bureau, which drew praise at the national scientific conference for creating large irrigated areas by drawing water with a high content of sand for irrigation, has been doing things consistently for over a decade and has insisted on combining scientific research with production to continuously develop ways to draw floodwater for irrigation, achieving rich results.

Luohuiqu is a large irrigated area covering 770,000 mu. The various levels of canals are designed according to theoretical plans for the transport of clear water. Since the 1950's when it began irrigating the land, it had always followed the rule of "closing the floodgates and stopping the water whenever the sand content surpassed 15 percent (i.e., when each cubic meter of turbid water contains 166 kilograms of sand)," so as to prevent the canals from being blocked by silt. Frequently, during summer drought when water is in short supply, there are 10 to 20 days or even a month's period when no water could be supplied, seriously affecting irrigation and drought resistance, and the conflict between the supply and demand of water was enormous. Changing this passive situation thus became the urgent demand of production in the irrigated region. Because of this, since the 1960's, they have carried out experimental research in drawing water with a high content of sand for irrigation, starting out from a point to an area and from neighboring localities to faraway places according to plan. They combined the actual situations in production and explored the pattern of transporting turbid water with high concentrations [of sand], and gradually they expanded the region for diversion of floodwater. Now, turbid water with a high content of sand can be transported over long distances smoothly without being limited by the sand content of the incoming water. The highest content of sand in the water drawn is 60 percent (i.e., each cubic meter of turbid water contains 965 kilograms of sand), successfully changing the harmful to the beneficial, expanding the source of water, and changing the sand in the floodwater into a resource for use in irrigation and for improving saline and alkaline land. In recent years, an additional 19 million cubic meters of water have been drawn each year on the average, constituting 20 percent of the total amount of water drawn for summer irrigation; 10 million tons of sand have been carried, constituting about 12 percent of the amount of sand transported each year by the Luohe. The water irrigates

100,000 mu-times of agricultural crops and releases silt to improve about 10,000 mu-times of saline and alkaline land. It has served a visible function in relieving "choking" drought and in improving low-yielding fields damaged by salinity and alkalinity. It has also reduced the burden of mud and sand in the Huanghe. According to surveys, drawing water with a high content of sand for irrigation has increased the yield of corn by from 13 percent to 28 percent and increased the yield of cotton by from 9 percent to 23 percent. The resulting gain from the improvement of saline and alkaline land has been outstanding. For the past 11 years, the Luohui irrigated area has drawn a total of 157 million cubic meters of floodwater, used over 97 million tons of sand, irrigated 830,000 mu-times of farmland, and released silt to improve over 90,000 mu-times of low-yielding fields.

At present, the experience of the Luohui region in drawing water with a high content of sand has been popularized and used in other large irrigated regions in the Guanzhong region and in some medium and small irrigated regions in northern Shaanxi, and they have all realized good results.

9296
CSO: 4007/562

IMPORTANCE OF AFFORESTATION SEEN IN SICHUAN FLOODING

Beijing GUANGMING RIBAO in Chinese 21 Aug 81 p]

[Article by Xinhuashe Reporters Xian Guangyou [1720 1684 0645] and Fan Shi [5466 8902]: "Be Alert; Do Not Allow Changjiang To Become a "Second Huanghe!" Forestry Experts Have Proposed a 10-Point Suggestion To Revive and Develop Forestry After the Flooding in Sichuan"]

[Text] We reporters visited the disaster areas in Sichuan and saw the massive amounts of silt left by the floodwaters after the flood had receded. The silt was generally about 1 chi thick, while in some places it was about 2 chi thick. Responsible comrades of the Chongqing Municipal Party Committee told us that when the peak of the flood reached Chongqing, the flow in the Changjiang reached a high of over 80,000 cubic meters per second, and the sand content was 0.7 percent. When the flood reached Wushan (the exit point of the Changjiang from Sichuan), [the flow] was over 70,000 cubic meters per second. This shows that during the peak flooding period, over 500 cubic meters of mud and sand per second flowed from Sichuan, "the land of abundance," and the three gorges into the middle and lower reaches of the Changjiang and the East Sea. Calculated at over 500 cubic meters per second, this amounts to over 1.8 million cubic meters every hour. This figure is frightening!

Why does such a serious flood disaster occur on the several rivers in Sichuan? At the briefing session on flood resistance, rescue operations, and saving production held by the Sichuan Provincial Party Committee, everyone believed that one important reason is that the forests of the upper reaches have been seriously damaged, the mountain regions have been reclaimed without any regard, the ecological balance has been severely damanged, and thus the water and soil cannot be retained. Right after liberation, Sichuan Province was a province with relatively more forests; the percentage of coverage reached 19 percent. Now, forest coverage throughout the entire province has dropped to 13.3 percent. If felling continues at the present rate, the resources will be depleted after 10 years. Loss of water and soil over large areas has made the formerly clear water of the Changjiang turbid, and the mud and sand content of the Changjiang has increased.

Tan Qilong [6223 0796 7893], first secretary of the Sichuan Provincial Committee of the Chinese Communist Party, investigated the disaster situation and said painfully: In the past, some people have said that the Changjiang was about to become a second Huanghe, but their observation has not attracted sufficient attention.

Today, as I look at the water of the Changjiang and the water of the Huanghe, what is the difference? This is a painful lesson, and it must attract sufficient attention! He said that forestation and the greening of bare mountains have become important tasks that cannot be posponed. We must be determined to solve the problem. Otherwise, we will commit a grave mistake and will bring disaster upon later generations, and the damage will be endless. We cannot "take from our ancestors and create disasters for our offspring!"

To rapidly revive and develop our nation's forestry production, forestry experts and concerned people have proposed the following suggestions:

(1) As for management guidelines, we must rapidly change the past management guideline of using the forest regions on high mountains for production of lumber to one of utilizing water sources to nourish forests as the primary goal and of utilizing forests to produce lumber as secondary--thus fully developing the multiple gains of forests.

(2) As for the method of felling, we must stop the past irrational method of felling large areas and intensive and selective felling. We must practice the rational felling method of taking selective felling as the key and small-area comprehensive felling as secondary.

(3) Areas of forests nourished by water sources where the slope is steep and where revival is difficult after felling should be zoned as areas prohibited from felling.

(4) The backward technique of gathering logs by rolling them down slopes should be abolished, and great efforts should be exerted to develop and popularize the new technique of transporting logs by suspended cables.

(5) Planning must be overall, distribution must be rational, and the amount of felling should be adjusted according to the structure of the forest resources and the growth pattern, so that "green mountains will always remain and can always be utilized."

(6) Comprehensive utilization should be greatly developed, resources must be conserved, and problems of sources of energy and firewood for commune members in farm villages must be actively solved.

(7) The "forest law" (trial) must be strictly executed, and protection of forests and protection against fire must be carried out well.

(8) State-operated and collective forest farms mainly engaged in forestation should be established, and special teams should be organized to develop forestation on waste mountains, to renew land left after felling, and to increase backup forest resources.

(9) Reclamation of high mountains must be strictly prohibited, Regulations must be established to prohibit reclamation above a certain slope. Areas that have already been reclaimed should be gradually returned to the forest, and farming there should be phased out.

(10) The problem of forest rights and of a system of management must be solved early. Forestry management agencies and technical forestry teams must be established and made sound. The various forestry policies must be conscientiously implemented and executed.

Editorial Comment: As to being alert to the problem regarding the worsening of the ecology of the upper reaches of the Changjiang, which may have serious results, this is not a new problem. In August 1979, this paper gave space to a special column for discussion of the question, "Is the Changjiang in Danger of Becoming a 'Second Huanghe?'" This is a problem that has been noted by many scientific and technical workers. This year, the cold fact that the floodwaters in Sichuan poured into the Changjiang has once again brought this question to light.

We suggest that all persons who are concerned about construction of the motherland conscientiously read this report to see how much havoc can be wrought by the destruction of forests and vegetation. Actions that violate the laws of nature will naturally be punished by nature. We must remember this painful lesson. For our offspring, we must set out goals to take scientific measures to prevent the Changjiang from becoming a second Huanghe!

9296
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PROGRESS OF AGRICULTURAL RECLAMATION PRODUCTION

Kunming YUNNAN RIBAO in Chinese 28 Jul 81 p 1

[Article by Wei Xiangjie [7614 4382 2638]: "Increased Progress in Development of Diversification of Our Province's Agricultural Reclamation System"]

[Text] During the past 2 years, our province's agricultural reclamation system has emphasized the development of the superiority of natural resources and has gradually changed the internal structure of agriculture; the road toward diversification has become wider and wider; the development of production of commodities has quickened; and the agricultural farm economy has been enlivened.

The various state farms belonging to the province's agricultural reclamation system are located mostly in the tropical zone of the border regions and the subtropical regions, which are beneficial to the development of economic crops. As early as the beginning of the 1950's during the period the farms were being established, each farm paid attention to suiting measures to local circumstances, and such economic crops as rubber, tea, coffee, pepper, and sugarcane were developed. Later, because of the influence of leftist ideology, farms having crops with long growth periods unilaterally emphasized the development of rubber. Thus, only rubber was planted but other economic crops were not planted. Farms having crops with short growth periods one-sidedly grasped food-grain crops. Therefore, many farms for a long period remained in the mudpond of cultivating only a single crop and carried the burden of deficits. After the Third Plenum of the 11th Party Central Committee, each farm conscientiously launched a discussion of the criterion of truth, cleared away the influence of leftist ideology, readjusted management guidelines, started out from the actual situation of each farm, and, on the basis of determining the main crops for each farm, broad roads were opened for production, diversification was implemented, there was overall, development and commercial production bases were rapidly established. The Xishuangbanna reclamation area planted mainly rubber, but at the same time it developed tea, sugarcane, food grains, and tropical fruits. The Ximao and Lincang reclamation regions planted mainly tea but placed equal emphasis on rubber and food-grain crops. The Honghe reclamation region produced rubber well, while at the same time it utilized the convenience of railroad and highway transportation to exert efforts to develop tropical fruits and to plant cinnamon and other such southern medicinal plants. Lujiang and Xincheng farms in Baoshan County managed and sapped the rubber trees on their rubber plantations well, and they also selectively developed coffee and pepper production.

Because management guidlines were determined by starting out from the actual situation, the superiority of nature was developed, and with the establishment of various forms of the production responsibility system, the yield of food grains throughout the entire system last year showed an increase of 7.9 percent over 1979; other kinds of economic crops also showed relatively great development. The setting out of plants on young plantations mainly engaged in rubber surpassed plans by 22 percent, four times that of 1979. The yield of dry rubber increased 16 percent over 1979. The areas planted in tea, coffee, pepper, and tropical fruits all surpassed the planned indicators and tasks. Total yields compared to those of 1979 showed that tea increased 140 percent, coffee increased 26 percent, pepper increased 16 percent, and tropical fruits increased 240 percent. The development of diversification enlivened the agricultural farm economy, and with the addition of the results of other policies, the whole system realized a profit of over 41 million yuan last year.

This year, the enthusiasm on the part of each farm in the provincial agricultural reclamation system to develop diversification is even higher. With a 40-percent reduction in the total amount of investment in capital construction by the state from last year, ways are being found, private funds are being utilized, funds from profits kept by the farms are being utilized, and capital from bank loans is being utilized for the reclamation and cultivation of seedlings. It is estimated that over 70,000 mu of rubber plants can be set, and the development of tea, coffee, pepper and tropical fruits will be faster. The area of newly set plants of tea and tropical fruits this year is equivalent to the cumulative total of the areas in past years. Coffee has increased fourfold, while pepper has increased 40 percent. The pressing season for sugarcane has ended, and the yield of sugar has shown a net increase of over 4,000 tons over the previous year--an increase of 51 percent.

9296
CSO: 4007/562

II. PUBLICATIONS

TABLE OF CONTENTS OF 'NANJING LINCHAN GONGYE XUEYUAN XUEBAO' NO 2, 1981

Nanjing NANJING LINCHAN GONGYE XUEYUAN XUEBAO [JOURNAL OF NANJING TECHNOLOGICAL COLLEGE OF FOREST PRODUCTS] in Chinese No 2, 1981 preceding p 1

[Text] Studies on Physical and Mechanical Properties of Bamboo Woods.....Zhou Fangchun [0719 5364 4783], Bamboo Laboratory (32)

Estimates of Genetic Gains from the Seed Orchard of the Chinese Fir (Cunninghamia lanceolata Hook.).....Ye Peizhong [5509 1014 1813] and Chen Yuewu [7115 1471 2976], both of the Nanjing Technological College of Forest Products; et al. (47)

A Study of Constitution of Subalpine Dark Coniferous Forests in Xizang.....Xu Fengxiang [1776 7685 5046], Department of Forestry (61)

Twenty Years' Introduction of Olives into Jiangsu Province .....Liu Liu [2692 691A], Li Zanwu [2621 6363 2976], Liu Kanxi [0491 1030 0823], et al., all of the Jiangsu Botanical Institute (68)

Adaptive Selection and Breeding of Olives: Research on Seedling Selection with Special Reference to Early Determination Regarding Its Economic Characteristics.....Gu Yin [7357 1243], Sun Zuijun [1327 6816 0689], et al., all of the Jiangsu Botanical Institute (78)

An Experiment on the Toxicity of Three Water Borne Preservatives against Polystictus Versicolor.....Zhou Huiming [0719 1979 2494], Jin Zhongwei [6855 6850 3634] and Wang Shuhan [3769 2579 5060], et al., all of the Department of Forestry (86)

A Preliminary Study on Wood Properties of Gums Growing in the Leizhou Peninsula.....Forestry Office of Leizhou, Guangdong Province; Institute of Tropical Forestry, Chinese Academy of Forestry (95)

Some Improvements in the Direct-fire Type Dryer for Drying Particles in Particleboard Manufacturing.....Zhang Guilin [1728 6311 7792] and Zhou Dingguo [0719 1353 0948], both of the Teaching and Research Group of Wood-based Panels (106)

Species Nova Camelliae sinicae.....Huang Pengcheng [7806 7720 2052], Department of Forestry (107)

A New Definition to Dirac-Function.....Wang Youjing [3769 0645 5464], Basic Curriculum Department (117)

9717
CSO: 4007/546

TABLE OF CONTENTS OF 'LINYE KEJI TONGXUN' NO 5, 1981

Beijing LINYE KEJI TONGXUN [FOREST SCIENCE AND TECHNOLOGY] in Chinese No 5, 1981 on back cover

[Text] Nursery Practice of Salix babylonica by Placing the Catkin-bearing Branches on the Bed Horizontally.....Liu Ping [0491 1627], Jilin Parks Management Office (1)

The Successful Transplanting of Ulmus propinqua Seedlings Grown from Tissue Culture..... (2)

Sexual Propagation of Bambusa pervariabilis.....Ning Caiqiang [1380 2624 1730], Beijiang Forestry Sciences Institute, Liuzhou Prefecture, Guangxi (4)

A Simple Airflow Method Used in the Measurement of Respiration .....Chen Yongsheng [7115 3057 4141], Department of Forestry, Northeastern Forestry College (5)

Utilization of Wild Quercus acutissima and Liquidambar formosana in Rolling Hilly Areas.....Guo Chuanyou [6753 0278 0645], Jiangsu Botanical Research Institute (8)

Intercropping Forest Trees with Cereal Crops and Water and Soil Conservation.....Zhang Xianyi [1728 0341 0308], Forestry Research Institute, Chinese Academy of Forestry Sciences (9)

First Complete Plantlets Raised in In Vitro Culture of Juvenile Embryos from Camellia oleifera.....Long Zhenxiong [7127 2182 7160], Shaoyang Prefecture Forestry Sciences Institute, Hunan (12)

Effects of PVO Transpiration Inhibitor Applied on Olive Trees .....Zhang Zirong [1728 1311 2837], Institute of Forestry, Chinese Academy of Forestry Sciences (16)

A Preliminary Report of a Study on Wilt Disease in Lycium barbarum.....Liu Zhenrong [0491 2182 2837], Forestry Research Institute, Qinghai Academy of Forestry Sciences (19)

Preliminary Study on the Dispersion Ability of the Scleroderma sp. F_1 in Forests and Its Control Effects.....Guangdong Institute of Forestry Sciences; et al. (21)

Notes of Observation on the Granulosis Virus of Pygaera anastomosis.....Li Yajie [2621 0068 2638; deceased], Bi Shuchun [3968 1659 2504], Zhang Xingda [1728 5281 6671], et al., all of the Forestry and Soils Research Institute, Chinese Academy of Sciences (23)

A Preliminary Study on the Pathogen of Milky Disease of Holotrichia diomphalia..... (24)

A Preliminary Report of a Study on Hyphantria cuned Drury..... He Jietian [0149 0094 3944] and Liang Chengjie [2733 2052 2638], both of the Forestry Research Institute, Chinese Academy of Forestry Sciences; et al. (27)

Culture and Utilization of Poplars in Turkey..... (30)

A Description of Quercus variabilis var. pyramidalis..... (inside back cover)

9717
CSO: 4007/542

TABLE OF CONTENTS OF 'SENGONG KEJI TONGXUN' NO 5, 1981

Beijing SENGONG KEJI TONGXUN [FOREST INDUSTRY SCIENCE AND TECHNOLOGY] in Chinese No 5, 1981 on back cover

[Text] Working of the Cycloidal Gear.....Li Yonghao [2621 3057 3185], Northeastern Forestry College (1)

Elimination of Oil Leakage Trouble with the Final Reducer on Skidder.....Hong Haitao (3)

Reformation of Sawing Mechanism with YJ_4 Chain Saw..... Su Liecheng [5685 3525 6134], Zhongnan Forestry College (4)

Machining of Gear Shape in the Reparation of the Worn Components of Truck Gear with Double Modulus and Short Teeth .....Tan Yunan [6009 3768 2809], Liuzhou Forestry Machinery Manufacture and Repair Plant (5)

Application of SPLINE Function Curve on Truss Arch Bridge .....Wei Fuxi (7)

Study of the Theory for Raising the Recovery Rate of Lumber and the Practical Application.....Sun Zuobin [1327 0155 2430], Science and Technology Section, Shandong Lumber Plant (12)

The Success of Research and Preparation of the Priming Paint of Emulsion for Direct Painting on Wood-based Panels..... Wang Zucheng [3769 4371 1004], Lumber Industry Research Institute, Chinese Academy of Forestry Sciences (14)

Preliminary Study of the Theory of the Closed Circulation of Water for the Wet Process Fiberboard Production.....Zhu Yimin [2612 0001 3046], Shanghai Construction and Man-made Board Plant (15)

Analysis of the Precision of the Set Works of Band Saw..... Zhong Zhenhuan (19)

Saw-teeth Processing with Saw Sharpener.....Hui Shixing (21)

Small Jet-type Dryer for Veneer.....Hu Shiyu [5170 0013 3842], Tianjin Furniture Plant No 5; Zhang Binyuan [1728 1755 3220], Nanjing Forest Products Industrial College (22)

Felling Methods in the Forests in Mountainous Area..... (25)

Storing Tree Length for Spare and Process..... (27)

Finnish Plywood, Particleboard and Fiberboard Made With a Lignin-base Adhesive..... (29)

Mat Forming Method and the Equipment Used..... (32)

9717
CSO: 4007/553

AUTHOR: FANG Dingyi [2455 1353 0001]
WANG Yongkun [3769 3057 0981]
ZHENG Yumei [6774 3768 5019]
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ORG: All of the Jiangsu Agricultural College

TITLE: "Studies on the Etiology and Specific Control of Gosling Plague"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Aug 81 pp 1-8

TEXT OF ENGLISH ABSTRACT: An outbreak of enzootic disease occurred in flocks of 5-20 day old goslings in the city of Yangzhou, Jiangsu Province, in 1956, and a virus was successfully isolated from the tissues of the infected goslings. In 1961 a similar virus was isolated which could reproduce a disease identical to that observed in natural outbreaks. The names Gosling Plague (GP) and Gosling Plague Virus (GPV) were thus given to this specific disease and its causative agent.

In 1962 anti-gosling plague serum was prepared. After serial passages in developing goose embryos, the virus was gradually attenuated and a vaccine was obtained from it for prophylaxis of GP. During 1962-1979, about 4 million female geese were vaccinated with this live attenuated vaccine. Goslings from vaccinated mothers or those receiving antiserum prepared with the Jiangsu strains of GPV

[Continuation of ZHONGGUO NONGYE KEXUE No 4, Aug 81 pp 1-8]

could successfully withstand challenge from strains of GPV isolated from different parts of China. The Chinese GPV was found to be antigenically similar to the GPV isolated in Vietnam and Hungary.

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ORG: All of the Institute of Crop Germplasm Resources, Chinese Academy of Agricultural Sciences

TITLE: "Ecological and Genetic Investigation of the Large Grain Germplasm of Spring Wheat"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Aug 81 pp 22-27

TEXT OF ENGLISH ABSTRACT: This paper discusses the results of experiments in Beijing, Changbei (Hebei Province), Yinchuan (Ningxia), Kashan (Heilongjiang Province), Xining (Qinghai Province) and Lhasa (Tibet), in 1978 and 1979, on 54 varieties of spring wheat originating from 6 provinces/cities of China and 25 countries of the world.

The results of experiments indicate that:
1. There exists a positive correlation between the 1000 grain weight of wheat and the altitude of the experimental plot. Most varieties showed that the higher the altitude of the experimental plot, the heavier the 1000 grain weight.

[Continuation of ZHONGGUO NONGYE KEXUE No 4, Aug 81 pp 22-27]

2. According to the variation of the 1000 grain weight of experimental varieties in different ecological regions, the large grain germplasm of spring wheat has been preliminarily sorted as follows:
(1) Adaptive ecological type;
(2) Stable ecological type;
(3) Ecological type of plateau.
3. By analyzing the lineage of large grain germplasm of spring wheat, we may obtain large grain variety of wheat from hybrid combinations between Tr. aestivum x Tr. aestivum, Tr. aestivum x Tr. durum, Tr. aestivum x Agropyron glaueum.

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YANC Kecheng [2799 0344 6134]
LEI Benming [7191 2609 7686]
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ORG: All of the Research Laboratory of Maize, Sichuan Agricultural College

TITLE: "Studies on the Inheritance of Quantitative Characteristics for Plant Type in Some Inbred Lines of Maize"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Aug 81 pp 28-36

TEXT OF ENGLISH ABSTRACT: The present study shows that the general combining ability of quantitative characteristics for plant type can be divided into positive and negative values, and the direction of the values will not change with years or with the mating groups.

The results of this experiment also reveal that additive gene effects make a greater contribution than do non-additive ones to the inheritance of plant type traits in maize. There is a big difference in the magnitude of heritability estimates among these characteristics. Generally, estimates of the heritability in a broad sense were found to be high in most cases, whereas those estimates of

[Continuation of ZHONGGUO NONGYE KEXUE No 4, Aug 81 pp 28-36]

the heritability in a narrow sense usually varied among different traits. It is suggested by the authors that in developing an ideal type of maize plant, the parental inbred lines must be selected for their desirable attributes, giving priority to the combination of mating parents.

AUTHOR: LUO Peng [5012 7720]

ORG: Sichuan University

TITLE: "The Parthenogenesis of Rape and Its Use in Production"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Aug 81 pp 37-40

TEXT OF ENGLISH ABSTRACT: Artificial parthenogenesis of Brassica napus L. was induced by interspecific pollination with the pollen of B. campestris L. In this way, parthenogenetic haploids of rape were produced. The induced parthenogenetic haploids of rape were similar to their mother plants in shape, but rather smaller. The chromosome number of the body cells of the rape haploids was 2n = 19. By careful cultivation, treatment with 0.2 percent colchicine solution and selfing, some inbred seeds were obtained from which homozygous inbred lines such as 3529 were produced. The plants of the homozygous inbred lines of rape were similar to their mother plants in shape, normal in size and fertile. They were very uniform in their morphological characteristics. Crosses were made among the homozygous lines and the hybrid combination "3529 x Oro" was bred. The hybrid rape of parthenogenetic origin "3529 x Oro" is high yielding, good in oil quality and resistant to some stress conditions. It is now being cultivated in over 10,000 mu in western Sichuan Province.

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ORG: LI of the Crop Germplasm Resources Institute, Chinese Academy of Agricultural Sciences, Beijing; Vergara and Visperas both of the International Rice Research Institute, Philippines

TITLE: "Adaptability of Rice Cultivars to Different Temperature Patterns"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Aug 81 pp 45-50

TEXT OF ENGLISH ABSTRACT: The rice varieties from different countries have been tested at various growth stages for cold tolerance at the International Rice Research Institute. The results of the studies are as follows:

The cold tolerance reactivity of varieties at different growth stages tends to be very similar to the temperature pattern of areas where the varieties were originally grown. Six types of temperature patterns with the corresponding plant reactions to low temperatures at different growth stages are proposed. A highly significant negative correlation between the cold tolerance scoring at seedling stage and the latitude of the place of origin of the variety was found. No correlations were discovered among other growth stages and the latitudes of the place of origin of

[Continuation of ZHONGGUO NONGYE KEXUE No 4, Aug 81 pp 45-50]

the varieties concerned. In order to facilitate the breeding for cold tolerance, it is recommended to exchange the breeding materials as much as possible between localities with similar temperature patterns.

AUTHOR: SHAO Jinwang [6730 6855 2489]
ZHANG Jiahua [1728 1367 7520]

ORG: Both of the Laboratory of Plant Physiology, Department of Agriculture, Nei Monggol College of Agriculture and Animal Husbandry

TITLE: "Investigations of the Differences of Physiological Properties in Various Specific Types of Sugar Beets"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Aug 81 pp 51-60

TEXT OF ENGLISH ABSTRACT: A systematic study of the physiological properties of different specific types of sugar beets according to their physiological metabolism was carried out in our laboratory. We found that the yields and sugar content of various specific types were correlated to the differences of their physiological properties. During the developmental stage the metabolic activities of nitrogen, amino acids and phosphorus were much more vigorous in the high-yielding species (types) than in the high sugar content species (types), and therefore, more nitrogen and phosphorus were required. The increases of tuberous roots and leafages of these two types in different developmental stages were all related to the distribution of nitrogen, phosphorus and the photosynthetic products, and were restricted by the intensities of photosynthesis and absorbabilities. The differences of the physiological properties among various specific types may be taken

[Continuation of ZHONGGUO NONGYE KEXUE No 4, Aug 81 pp 51-60]

as the physiological basis for seed selection. The major problems to be considered prominently in the breeding work of sugar beets are the intensities of metabolic activities and photosynthetic properties and the rational distribution of their products. Results of these experiments indicated that the relative ratios of protein nitrogen and total nitrogen, of organic phosphorus and total phosphorus in tuberous roots, of amounts of sucrose and saccharide in leaves, and of weights of leaves and leaf stalks, as well as the dry matter content in leaves, may serve as referential physiological indices for the breeding of high sugar content species.

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ORG: All of the Tea Research Institute, Chinese Academy of Agricultural Sciences

TITLE: "The Suitable Region and Disposal of Tea Production in China"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Aug 81 pp 61-65

TEXT OF ENGLISH ABSTRACT: The tea production regions in China are mainly distributed in Zhejiang, Hunan, Anhui, Sichuan, Fujian, Yunnan, Hubei, Guangdong, Jiangxi, Guangxi, Jiangsu, Shanxi, Henan and Taiwan Provinces, all located south of Qin Mountain and the Huai River. According to the available information and investigation results, they can be primarily divided into four categories:
1. Most optimum region: This includes the hilly and mountainous areas in the southern parts of Nan Mountain, the mid- and lower reaches of the Yuan River and the Lanchen River.
2. Optimum region: This includes the hilly and mountainous areas in the southern parts of the Changjiang River and the surrounding area of the Sichuan Basin.

[Continuation of ZHONGGUO NONGYE KEXUE No 4, Aug 81 pp 61-65]

3. Sub-optimum retion: This includes the hilly and mountainous areas in the northern parts of the Changjiang River, Qin Mountain and the southern parts of the Huai River.
4. Unsuitable region: This includes the northern parts of Qin Mountain, the Huai River and the western parts of the Dado River.

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WANG Baozhong [3769 0202 0022]
WEN Xianfang [3306 6343 5364]
et al.

ORG: WANG Fujun, PENG and LAN, et al., all of Beijing Agricultural University; DENG, WANG Baozhong and WEN all of the Institute for Application of Atomic Energy, Chinese Academy of Agricultural Sciences; et al.

TITLE: "Studies of the Process of Fertilizer-N Absorption in Rice Plants by Using Isotope ^{15}N and on the Effect of the Application of N Fertilizer"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Aug 81 pp 66-71

TEXT OF ENGLISH ABSTRACT: A field tracer experiment using isotope ^{15}N demonstrated that the rate of fertilizer-N utilization by the total plant was in the following order: from turning green to tillering stage 6.76 percent, from turning green to primordia stage 24.17 percent, from turning green to maximum ear emergence 42.60 percent and from turning green to ripening 40.06 percent.

The content of fertilizer-N and soil-N in rice plants was determined. About

[Continuation of ZHONGGUO NONGYE KEXUE No 4, Aug 81 pp 66-71]

70 percent of plant-N was derived from soil-N and the remaining 30 percent from fertilizer-N. The mineral N-fertilizer from paddy soil during the growing period of rice played a very important role in rice production. Therefore, the problem of how to maintain high soil fertility deserves serious attention.

It was observed that when fertilizer-N was spread on the soil surface, the utilization of fertilizer-N was increased with the delay of application, but the retention of N in soil and loss of fertilizer-N were decreased.

The results of this experiment also showed that with the delay of application of fertilizer-N the percentage of N in rice kernels increased from 65.08 percent to 75.61 percent, corresponding to an increase in fertilizer-N utilization from 19.86 to 39.84 percent. Thus, the earlier the time of N application, the higher the rate of fertilizer-N utilization. However, in rice production it is not sufficient to attain high fertilizer-N utilization only. Consideration must also be paid to the nitrogen nutrition of rice plants in the earlier growing stage, which will result in greater vegetative growth, and moderate fertilization be applied in the later growing stage in accordance with the soil nutrient status.

AUTHOR: WANG Tingkui [3076 1694 7608]

ORG: Institute of Agricultural Sciences of Liuan District, Anhui Province

TITLE: "Studies of the Life Cycle of Corn Borers and the Effective Accumulated Temperature"

SOURCE: Beijing ZHONGGUO NONGYE KEXUE [SCIENTIA AGRICULTURA SINICA] in Chinese No 4, Aug 81 pp 72-80

TEXT OF ENGLISH ABSTRACT: This experiment was conducted under conditions of indoor changeable temperature similar to those of the living environment of corn borers. Based on the observation of the characteristics of the life cycle of corn borers and various instars of the larvae, an index list of larval instars was made, and a minimum squaring was adopted to find the starting point in various developmental stages of corn borers related to the effective accumulated temperature. With the obtained data, we checked the generations of corn borers and their occurrence in various stages. Having proved that our theoretical deduction generally coincided with the practical occurrence, a basis was provided for forecasting the occurrence by effective accumulated temperature and deducting the generations with annual mean temperature.

9717
CSO: 4009/473

AUTHOR: HUANG Jisheng [7806 6068 3932]
MO Rongda [5459 2837 6671]

ORG: Both of the Guangxi Academy of Agricultural Sciences

TITLE: "In Vitro Organogenesis of Ramie Boechmeria nivea (L.) Gaud"

SOURCE: Shanghai SHIYAN SHENGWU XUEBAO [ACTA BIOLOGIAE EXPERIMENTALIS SINICA] in Chinese No 2, Jun 81 pp 111-115

TEXT OF ENGLISH ABSTRACT: The present work reports the formation of plantlets from the hypocotyl of Ramie under the influence of different media with various combinations of plant hormones and other natural supplements.

The results indicated that MS and SH media were effective. Addition of BA or ZT (2-5 mg/L) to MS media for inducing the differentiation of shoot buds was better than that of the KT or other auxin (2.4-D, NAA, IAA) used. The emergence of shoot buds apparently was depressed if the auxin (0.2 - 2.0 mg/L) added to MS media annexed with BA. However, natural N-2-amine and other natural compounds added to the media for shoot formation were necessary.

When the induced adventitious buds were transferred into the media which either contained NAA (1.0 mg/L) or were deficient in hormones of 1/2 MS or White media, root systems were regenerated as whole plantlets. The present results provide a possibility for accelerating the vegetative propagation of the Ramie varieties.

9717
CSO: 4009/491

AUTHOR: ZHANG Cheng [1728 2052]

ORG: Anhui Provincial Bureau of Meteorology

TITLE: "An Investigation on Dryness and Wetness Indices in Anhui Province"

SOURCE: Beijing QIXIANG [METEOROLOGICAL MONTHLY] in Chinese No 8, 10 Aug 81 pp 2-5

ABSTRACT: Drought and flood form the major harmful weather of Anhui Province because they occur very frequently. Due to the very uneven nature of precipitation, the rainfall data from month to month may appear normal throughout a certain year, drought and flood would remain a fact of life for durations shorter than a month. After studying records of past 30 years, the author produces the following formula: If there are no 2 consecutive days of less than 0.5mm of rain or no rain in a period of 6-9 days, then an average daily rain of 0.5-10mm causes a minor flood [minor wetness], 10-35mm a large flood, and 35mm and more a specially large flood. If the rainfall is less than 1.0 mm for consecutively more than 15 days, a minor drought [dryness] is created, for more than 22 days a major drought is created. In the winter months (Dec to Feb) precipitation is extremely scarce anyway; therefore, if the total rainfall for the 3 months is less than 30 mm, there is a winter drought in Huaibei [north of Huai River.] These conclusions are the result of extensive computation of historical data. Factors affecting dryness and wetness are only briefly mentioned in the paper.

AUTHOR: ZHU Ruizhao [2612 3843 0340]
XUE Heng [5641 2709]

ORG: Both of Climate and Weather Center, Academy of Meteorological Sciences

TITLE: "Evaluation of Wind Power and Its Distribution in China"

SOURCE: Beijing QIXIANG [METEOROLOGICAL MONTHLY] in Chinese No 8, 10 Aug 81 pp 26-28

ABSTRACT: China and all the other countries of the world have had a very long history of utilizing wind power. It needs no fuel or transportation and it does not pollute the environment. There are other difficulties, however. The energy density of wind is only 1/816 of that of water; therefore, to produce the same amount of power, the diameter of a wind driven wheel must be many times the wheel driven by water. Wind energy is also influenced by the climate, the weather, and the topographical factors. The speed of wind is also not steady. One minute it might be too low to drive the machine, in another minute it might be more than 20-27 m/sec and the machine must be shutdown for the sake of safety. Following a preface of general discussion, the method of computing wind energy is introduced. Based upon an effective wind energy density and the accumulated hours of speed greater than 3m/sec, China is divided into 4 regions. The 4th region, including most of Yunnan, Guizhou, Sichuan, all of Gansu, Henan, Fujian, Guangdong, Guangxi, the southern part of Shaanxi, the western part of Hunan, etc. is the only region where wind energy resources are very poor. Effects of local terrain and height and roughness of ground surface on the speed of the wind are very briefly discussed also.

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QIAO Qiao [0829 2881]
DING Qingtang [0002 1987 1016]
et al.

ORG: All of the Institute of Forestry and Pedology, Chinese Academy of Sciences

TITLE: "Studies of Moisture Regime in Black Soils in Northern Part of Northeast China. IV. Agricultural Techniques for Reserving Soil Water and Improving Water Conditions of Farmland in the Region of Black Soils under Drought Weather"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 3, Aug 81 pp 203-211

TEXT OF ENGLISH ABSTRACT: In the black soil region, spring drought severely damages wheat but may not damage at all cultivated crops such as soybeans and corn. Therefore, in years of spring drought, less wheat and more soybeans and corn should be planted. Adoption of comprehensive agricultural techniques, including reasonable cultivation system of reserving soil water, correctly using soil water after removing crops, selection of good varieties and rational fertilizing system, may also give a higher yield of wheat even in spring drought years. However, if we want to improve the water condition in black soils perfectly, we should increase the proportion of soybeans and corn in the rotation system and give up the cropping system of wheat-wheat-soybean. In this way we can decrease the soil water consumption in the rotation system and establish a favorable and balanced water cycle in this soil region.

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PENG Xianglin [1756 4382 2651]
LU Zongfan [4151 1350 5672]

ORG: All of the Northwestern Institute of Soil and Water Conservation, Chinese Academy of Sciences

TITLE: "The Seasonal Variation of Soil NO_3-N and the Effect of Summer Fallow on the Fertility of Manured Loessial Soil"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 3, Aug 81 pp 212-222

TEXT OF ENGLISH ABSTRACT: Manured loessial soil (Lou soil) is one of the main cultivated soils in the loess region of Shaanxi and Shanxi Provinces of northwestern China. This paper deals with the seasonal variation of soil NO_3-N and the effect of summer fallow on the fertility of "Lou" soil. Field survey, field experiments and periodic tests of permanent plots were carried out. The results obtained are as follows:
1. In the cropping system of summer fallow-winter wheat, the seasonal regime of soil NO_3-N might be divided into five periods annually, i.e., the periods of accumulation, leaching, equilibrium of supply and requirement, supply-requirement discrepancy, and that of sharp discrepancy of supply-requirement of nitrogen.
2. Soil NO_3-N accumulated about 1.18 - 3.30 kg per mu after summer fallow, and leaching depth of soil NO_3-N ranged from 1-2 m below topsoil. The regression

[Continuation of TURANG XUEBAO No 3, Aug 81 pp 212-222]

equation of leaching depth of NO_3-N (Y mm) and rainfall (X mm) during the period of summer fallow was Y = 3.86 X.

3. Soil NO_3-N accumulated after summer fallow could meet the needs of nitrogen for the early growing stage of wheat. Thus the accumulated nitrogen provided a foundation for high crop yield. Yield of winter wheat after summer fallow was 57.5 - 124.0 percent (average 85.3 percent) higher than the yield of winter wheat after autumn crop.

4. In order to promote the favorable effect of summer fallow on soil fertility, attention should be paid to the time, depth and quality of summer plowing. In addition, it is necessary to apply adequate organic manure or quickly plant growing green manure crops.

5. Under the conditions of dry farming, if the rainfall is less than 300 mm in the summer fallow period and the amount of manure is less than 2500 kg per mu, a rotation system of wheat and summer fallow is appropriate; if the rainfall is sufficient (more than 400 mm) and the amount of manure is also sufficient (5000-7500 kg per mu), the cropping index may be increased relatively.

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TITLE: "Studies of the System of Soil Tillage of Paddy Soil in Southern Jiangsu Province"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 3, Aug 81 pp 223-233

TEXT OF ENGLISH ABSTRACT: Field experiments for comparison of the effect of different tillage methods on rice and wheat yield were carried out in Wuxi County during 1978-1979. The experiments showed that the fertility of the upper part of a plowed layer was promoted and the soil structure was improved more remarkably due to wheat cropping. The traditional method of soil tillage included plowing and harrowing under waterlogged conditions before rice transplanting, therefore the fertile surface soil was always turned over and soil structure disintegrated. Pot experiments showed that mechanical disturbance of soil does not benefit the liberation of nutrients. No tillage after stubble cleaning led to a minimum of soil disturbance, and was beneficial for the maintenance of soil structure of rice growth. Deep plowing in autumn was favorable for wheat growth and improvement of soil structure. Based on the results obtained it is recommended that a more rational tillage system might be no tillage in spring in combination with deep plowing in autumn in this region.

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TITLE: "A Primary Study on the Specific Adsorption of Copper Ion of Paddy Soils in Southern Jiangsu"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 3, Aug 81 pp 234-243

TEXT OF ENGLISH ABSTRACT: The present paper deals with the effect of the components of paddy soils on the specific adsorption of copper ion and its behavior. The samples used in the present experiment were collected from southern Jiangsu Province, and they were obtained from the cultivated layers of paddy soils derived from lacustrine deposits with pH 6.2 - 6.8. Incubated samples were also used in this experiment. The methods and results of the experiment are summarized as follows:

1. The amount of specific adsorbed copper is the amount of fixed Cu^{++} of soil which cannot be replaced by NH_4^+ ions but may be extracted by 0.1 N HCl. The Δ value of CEC, an expression of the specific adsorption sites in soil, is a reducing value of CEC of soil samples saturated previously with 1 N $CuCl_2$ before determining the CEC by the routine method. The amount of specific adsorbed Cu^{++} minus the Δ value of CEC is termed the "difference value," which is another expression of specific adsorption sites in soils.

[Continuation of TURANG XUEBAO No 3, Aug 81 pp 234-243]

2. The value of CEC was significantly correlated with free iron oxide and amorphous iron oxide. The decrease in Δ value of CEC of samples as results of their deferrization showed a significant positive correlation with the amount of free iron oxide removed. It is indicated that the free iron oxide may play an important role in the specific adsorption site which is expressed as the Δ value of CEC. In addition, the amount of adsorbed copper approached the Δ value of CEC when the organic matter was removed by H_2O_2. It gives more evidence for the conclusion mentioned above.

3. In free iron oxide, amorphous iron oxide is thought to exert the most important effect on specific adsorption because it is more active. It was confirmed by the results obtained from incubated samples that the Δ value of CEC increased with the increasing activity of iron oxide, and there were highly significant correlations between them with a correlation coefficient of 0.865**.

4. The "difference value" showed a significant correlation with organic carbon and complex-iron contents of the incubated samples. In natural paddy soils there was no significant correlation between them. However, there was a highly significant correlation between the "difference value" and the amount of organic material remaining in the residue of deferrized samples. On the other hand, the removal of organic material led to elimination of the "difference value" from the amount of adsorbed copper. These results further indicate that the organic matter is another form of the carrier of specific adsorption of copper expressed as "difference value."

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TITLE: "The Relationships between Organic Matter and Enzymatic Activities and Soil Fertility in Black Soils"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 3, Aug 81 pp 244-254

TEXT OF ENGLISH ABSTRACT: In this paper the basic substances of soil fertility and their variations in black soils with various exploiting periods and various levels of fertility are discussed. The results show that:
1. According to the correlation analyses, soil organic matter has significant correlations with soil N status and CEC. This means that the status and amounts of organic matter have a marked influence on the physico-chemical and biochemical properties of soil, and the activities of enzymes characterize the variations of the status and amount of organic matter to a certain degree. In black soils organic matter is predominant. It is considered that the core of fertility in black soil is organic matter and the activity of enzymes can be used as an important auxiliary index to characterize the level of fertility in black soils.

[Continuation of TURANG XUEBAO No 3, Aug 81 pp 244-254]

2. After exploited, the total amount of organic matter and the amounts of humic and fulvic acids are decreased obviously with the increase of the exploiting periods. The amount of active humic acid is slightly increased in thick black soil and is little changed in meadow black soil in the initial years of exploitation, but gradually decreases after that. Humin, a more stable component of humic substances, also decreases with the increase in exploiting periods. Correspondingly, the activities of all six enzymes tested show a tendency to decrease with the increasing of exploiting periods. However, the activity of polyphenol oxidase in cultivated soils is markedly lower than that in virgin land. As for enzymatic activities, the activities of all enzymes (except those of polyphenol oxidase) are weakened with the depth of both virgin land and cultivated land.
3. In thick black soil, there is a remarkable difference in levels of fertility between fertilized lands and other land. In the former, the total amounts of organic matter and various components of humic substances are higher, the activities of catalase and invertase are higher, and those of polyphenol oxidase and phosphatase are lower than those of the latter.

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TITLE: "A Preliminary Study of the Nutrient Balance of Soil under Chinese Fir Plantation and Broadleaved Mixed Forest"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 3, Aug 81 pp 255-261

TEXT OF ENGLISH ABSTRACT: The Chinese fir (Cunninghamia lanceolata) is one of the most important timber conifers in China; however, the forest cannot grow well due to soil deterioration resulted from the successive reforestation on the same cutting area of the same species. The present paper deals with the preliminary investigation on the relationship between the nutrition status of soil and reforestation of the Chinese fir.

The results obtained from experiments reveal that, in comparison to broadleaved trees, the Chinese fir takes in more nutrients from the soil and returns fewer nutrients in the form of litter to the soil. In addition, the soil under Chinese fir plantation was liable to be eroded in the early growing stage due to the bare soil surface and intercropping of food crops, whereas under the broadleaved mixed forest almost no erosion was found and the soil fertility tended to be promoted.

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TITLE: "Microbial Degradation of γ-BHC in Soils with Adequate Moisture Content"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 3, Aug 81 pp 273-280

TEXT OF ENGLISH ABSTRACT: An experiment on the degradation of γ-BHC (r-hexachlorocyclohexane) by microbial populations was carried out using soil samples from orchards and wheat fields in which BHC was applied for many years. It was found that γ-BHC in soils could be degraded more rapidly by soil microbes under the optimum temperature and adequate soil moisture conditions. All of the γ-BHC added to the soil (700 μg/10 g soil) was completely degraded within 56 days under favorable moisture conditions. Microorganisms able to use γ-BHC as their sole carbon source for growth were isolated and counted on a selected medium. It was shown that both in shaking culture and sterilized soil culture γ-BHC was degraded obviously by Flavobacterium sp. 350#, Agrobacterium sp. 70# and Alcaligenes sp. 670#. Within 84 days, 63.1 percent of the γ-BHC applied was degraded by Flavobacterium sp. 350#. It was noticed that the microbes did not transform the γ-BHC into β-BHC, which is more harmful to humans, either in the soil culture or in pure culture.

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TITLE: "On the Alkalization of Salt-affected Soils in Coastal Region"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 3, Aug 81 pp 281-289

TEXT OF ENGLISH ABSTRACT: A significant concern of agricultural practice is whether alkalization of salt-affected soils in coastal regions occurs after their reclamation. The present investigations both in fields and the laboratory deal with this respect of salt-affected soils in the coastal regions of Jiangsu, Zhejiang and Liaoning Provinces. The results are summarized as follows:

1. In the process of intensive salinization resulting from the action of underground water with high mineralization rate because of the process of Ca^{++} on soil absorbtive complex exchanged by Na^{+}, the alkalization takes place in coastal salt-affected soil. Its alkalinity is positively correlated with salt content of the soil. Generally, the coastal salt-affected soil does not show the characteristics of alkaline soil due to the influence of a large quantity of neutral sodium salt in the soil solution.
2. Under the process of soil evolution or the conditions of its reclamation and utilization, dealkalization of the soil will take place with the process of desalinization in the soil, which means the decrease of absolute content of

[Continuation of TURANG XUEBAO No 3, Aug 81 pp 281-289]

exchangeable Na^{+} on the soil absorptive complex and the decline of alkalinity of the soil. As long as appropriate and reasonable measures of water management, agricultural and forest practice are adopted in accordance with the local conditions, the soil alkalization can be controlled.
3. The phenomenon of increase in soil pH and total alkalinity in the process of desalinization of coastal salt-affected soils should be analyzed from the viewpoint of soil genesis. This phenomenon may occur under the soil desalinization process and alkalization taking place simultaneously, and it may also occur under the processes of dealkalization and desalinization. In the latter case, with the leaching of a large amount of neutral salts, the temporary increase of pH and total alkalinity may be induced by the hydrolysis of exchangeable Na^{+} on soil absorptive complex, which just illustrates the beginning of soil dealkalization and not the occurrence of alkalization. Also proved by the data of our investigations is that the alkalinity decreases with the further developing of desalinization of the soil. The dealkalization process occurring simultaneously with the desalinization in coastal salt-affected soils may be related to the $CaCO_3$ and biological activities in the soil.

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TITLE: "A Discussion of Geochemical Characteristics of Main Soil Groups in Northern Hunan Province"

SOURCE: Beijing TURANG XUEBAO [ACTA PEDOLOGICA SINICA] in Chinese No 3, Aug 81 pp 290-299

TEXT OF ENGLISH ABSTRACT: The data used in this paper are obtained from 13 selective soil profiles and weathered parent rocks which were collected from Taoyuan County in northern Hunan Province. A discussion is made on the content of elements, profile differentiation and element loss by eluviation and accumulation of elements of main soil groups. The main soil groups in this area are roughly distinguished into four geochemical types based on the difference in their geochemical characteristics, namely, relic carbonated, weakly ferallitic, ferallitic and old ferallitic types.

Yellow-red earth as a zonal soil is characterized by bioclimatic and geochemical properties in this region. The remarkable eluviation of base, Si, Zn and Ni, accumulation of Fe, Al, Mn, Co, Cu and Cr, and marked differentiation of elements in the profile significantly reflect the geochemical characteristics in the

[Continuation of TURANG XUEBAO No 3, Aug 81 pp 290-299]

formation of this soil, and according to its geochemical characteristics this soil is regarded as being of the ferallitic type in soil-geochemical classification. Of course, there are various soils of different geochemical types in this area due to different processes of soil formation. Therefore, it is of great significance to take the geochemical characteristics into consideration for classification and amelioration of soils.

9717
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TITLE: "First Report of an Outbreak of Parasitic Bronchitis in Water Buffaloes in Jiangsu Province"

SOURCE: Beijing ZHONGGUO SHOUYI ZAZHI [CHINESE JOURNAL OF VETERINARY MEDICINE] in Chinese No 7, 22 Jul 81 pp 2-3

ABSTRACT: In Sep-Dec 79, parasitic bronchitis occurred to 73 heads of water buffaloes among a herd of 136 heads at a water buffalo breeding farm of a certain commune of Gaoyou County, Jiangsu Province. In the course of the outbreak, 15 heads died of the disease. Dissection revealed parasitism of Dictyocaulus viviparus, a nematode of the Dictyocauludae family, in the lungs. This parasite had been previously discovered among yellow oxen in China in such regions as Beijing, Xinjiang, Gansu, Ningxia, Qinghai, Shaanxi, Guizhou, Sichuan, Neimeng, Zhejiang, Fujian, Hubei, Guangdong, Guangxi Zhuang Nationality Autonomous Region, Yunnan, etc. In 1961,there was a report of discovery of the parasite in the lungs of one water buffalo among 29 examined in Wuhan. An outbreak of this size was, therefore, the first among water buffaloes. Clinical symptoms and treatment procedure are described. Preventive measures and diagnostic technique are also discussed.

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TITLE: "Influence on Growth and Sexual Function Following Injection of Androgens in Newborn Piglets"

SOURCE: Beijing ZHONGGUO SHOUYI ZAZHI [CHINESE JOURNAL OF VETERINARY MEDICINE] in Chinese No 7, 22 Jul 81 pp 4-6

ABSTRACT: Barraclough (1958), Gorski et al (1963), Jacobsohn (1964) had all reported effects of testosterone propionate in suppressing sexual maturity, weight gaining etc. on mice, but there have been no reports of the effects of such androgens on domestic animals. From Oct 78 to Jun 79, and again from Aug 79 to May 80, the authors carried out experiments with 78 newborn piglets. Within 24 hours after birth, testosterone propionate was administered in muscular injection (100 mg per piglet). A control group was established under identical feeding conditions to form the first experiment. Doses of either 100 mg/head or 200 mg/head were used for the second experiment. No suppression of sexual development was detected among the male or female piglets. Histological observation of the testes did not reveal any abnormality. The weight gain result was statistically significant in the first experiment but was less than apparent (7.9 percent heavier than the control) in the second experiment.

6248
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No. 168

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CHINA REPORT

AGRICULTURE

No. 168

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

Success in Procurement of Summer Economic Crops Reported
(ZHONGGUO CAIMAO BAO, 29 Aug 81)..... 1

Feed Industry Development as Corner Stone of Poultry, Livestock Industry Urged
(Ma Yushan; ZHONGGUO CAIMAO BAO, 27 Aug 81)..... 3

'JINGJI GUANLI' on Increased Income Distribution
(People's Communes Administrative Bureau of Ministry of Agriculture; JINGJI GUANLI, 15 Aug 81)..... 6

Briefs
Food Industry Forum 14
Poor Counties' Income 14

Fujian

Briefs
Reservoir Construction 15
Grain Procurement 15

Guangdong

Briefs
Indiscriminate Logging 16

Heilongjiang

Comprehensive Utilization of Timber Promoted
(RENMIN RIBAO, 20 Aug 81)..... 17

Briefs
Farm Product Prices 19
Fall Harvest Results 19

Henan

Briefs
Tobacco Transportation 20
Forestry Protection Circular 20
Farm Output 20

Jiangsu

Briefs
Cotton Harvesting 21

Jiangxi

Briefs
Cotton Output 22
Industrial Crops 22

Jilin

Briefs
Seed Selection 23

Nei Monggol

Commune's Implementation of Responsibility System Described
(RENMIN RIBAO, 20 Aug 81)..... 24

Shaanxi

Briefs
Cotton Crop Loss 28

Shandong

Briefs
Huimin Prefecture Drought 29

Shanghai

Measures for Gaining Consistently High Late Rice Crop Yields Outlined
(Shanghai Municipal Farm Skills Promotion Station; SHANGHAI
NONGYE KEJI, Aug 81)..... 30

Zhejiang

Briefs

Taizhou Prefecture Economic Diversification 37
Agricultural Production 37

ABSTRACTS

AGRICULTURE RESEARCH

SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] No 4, 5 Aug 81 38

AGRICULTURAL SCIENCE

HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES], No 8, Aug 81 40

METEOROLOGY

QIXIANG XUEBAO [ACTA METEOROLOGICA SINICA], No 3, Aug 81 41

I. GENERAL INFORMATION

SUCCESS IN PROCUREMENT OF SUMMER ECONOMIC CROPS REPORTED

Beijing ZHONGGUO CAIMAO BAO [CHINA FINANCE AND TRADE JOURNAL] in Chinese 29 Aug 81 p 1

[Article: "Money Value of Agricultural Byproducts Procurement During First Half of Year Amounts to More Than 6.6 Billion Yuan. Procurement Quantities of Mountain Forest Native Produces Drops in Most Areas; Varying Degrees of Increase in Procurement Quantities of Major Economic Crops"]

[Excerpt] According to National Supply and Marketing Cooperative statistics, the quantity of agricultural byproducts procured nationwide during the first half of this year totaled 6.63 billion yuan, an 8.9 percent increase over last year. Nineteen of 28 provinces, municipalities, and autonomous regions (not including Tibet), had a greater quantity of procurement than during the same period last year. In the provinces and autonomous regions of Xinjiang, Henan, Ningxia, Hubei, and Anhui, the increase was greater than 20 percent. In the provinces and autonomous regions of Shandong, Guangxi, Zhejiang, Hunan, and Nei Monggol, the increase was greater than 10 percent.

In terms of varieties, cotton, flue cured tobacco, sun cured tobacco, tea, ramie, citrus fruit, wood fungus, preserved kohlrabi, and raw lacquer, all major economic crops, saw varying degrees of increased procurement. Cotton procurement during the first half of the year amounted to 4.93 million dan, for an all-time high. Flue-cured tobacco procurement amounted to 1,605,000 dan, a 29.3 percent increase over the same period last year. Spring and summer tea procurement amounted to 2,949,000 dan, a 13 percent increase over the same period last year.

As a result of the fairly rapid development of rural collective and household sideline industries, procurement of livestock products for the first half of the year reached 697,230,000 yuan, a 36.4 percent increase over the same period last year. Procurement of sheep wool, sheep skin, goat skin, and rabbit fur amounted to 9.7, 17.6, 8.6, and 59.8 percent respectively over the same period last year.

In minority nationality areas, procurement of agricultural byproducts during the first half of the year was very good. In Xinjiang Province, quantity of procurement for the first half of the year stood at 105 million yuan, a 43 percent increase over the same period last year. Ningxia had a 39 percent increase; Guangxi an 18.2 percent increase; and Nei Monggol a 12.4 percent increase.

In some areas agricultural byproduct procurement plans were not well fulfilled. Of particular note was the continued decline in procurement of mountain forest native products such as the amount of procurement of native products, which saw an 8.7 percent decline during the last half of last year over the same period the year before. During the first half of this year, a further decline of 12.4 percent over the same period last year occurred. Except for individual provinces, procurement quantities in most provinces declined in varying degrees.

Correspondent Tang Youren [3282 2569 0088] has reported that as of 20 August procurement of wheat in the 14 major summer grain producing provinces and municipalities broke 20 billion jin. Procurement of rapeseed in the 15 major summer oil producing provinces and municipalities was almost 5 billion jin, a procurement of 2.66 billion jin more than during the same period last year. The fine quality of the wheat and rapeseed going into storage everywhere is such as has been rarely seen in recent years. This is the overall situation in summer grain and oil procurement this year following nationwide general implementation in rural villages of a system of responsibility for production. It vividly demonstrates that the system of responsibility in agricultural production has not only aroused the enthusiasm of farmers for production of grain and oil, but has also aroused their enthusiasm for sales to the state of grain and oil.

9432
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FEED INDUSTRY DEVELOPMENT AS CORNER STONE OF POULTRY, LIVESTOCK INDUSTRY URGED

Beijing ZHONGGUO CAIMAO BAO [CHINA FINANCE AND TRADE JOURNAL] in Chinese 27 Aug 81 p 2

[Article by Ma Yushan [7456 3768 1472]: "What Policy Should China Follow in Development of Its Livestock Raising Industry?"]

[Text] Editor's Note: A letter from Comrade Liang Jincai [2733 6930 2088] of the Longmen County Livestock Office in Guangdong Province reports that the current rapid development in rural villages of poultry and livestock feeding industries, mostly by commune member households, very much requires mixed feeds that are fairly high in nutrient value. However, for localities to formulate such feeds, particularly full value mixed feeds, is very difficult, and frequently one area will lack fishmeal, while another will lack bean cake or peanut cake, or else only the greatest efforts will get soybeans, and there will be no certain source of supply of alfalfa. In addition, some vitamins and preservatives are in very short supply. His letter hopes that the state will move quickly to set up in each province and municipality a group of plants to produce full range mixed feeds to meet the needs of rural village large-scale development of poultry and livestock feeding industries, and gradually move toward scientific feeding of livestock, while at the same time changing the current situation whereby large state hog farms and chicken farms depend on the importation of full value mixed feeds.

What program should China follow in developing its livestock feeding industry? Are the views proposed by the letter practical and workable? We have asked Comrade Ma Yushan of the Ministry of Food to give his views on these questions.

With the implementation of rural village economic and political policies and promotion of systems of responsibility for production in the wake of the Third Plenary Session of the 11th Party Central Committee, an unprecedently very good situation has taken place in agricultural production. The poultry and livestock feeding industries have been rapidly revived and developed, and remarkable improvement has

taken place in the supply of meat, poultry, and eggs in cities. However, there is no denying that China's poultry and livestock output is still a long way from being able to satisfy domestic consumption and export needs. The diet of China's people still consists principally of grain, and the proportion of poultry and livestock products in it is very small. In terms of average annual per capita consumption of meat and eggs, levels of consumption by the Chinese people is greatly below average world consumption levels. A change in this state of affairs will require unflagging efforts for the gradual building of a modern livestock feed industrial system in China for the production of scientifically formulated, superior quality, quick acting feed in order to create the necessary conditions for the large-scale development of the livestock and poultry feeding industry. Thus a steady increase will take place in the level of poultry and livestock consumption by the Chinese people, effecting, as a result, a gradual fundamental change in the diet of the Chinese people.

Large-scale development of the poultry and livestock raising industry and modernization of production is dependent on development of a modern feed industry. This has been confirmed by the process of development of the poultry and livestock raising industries in some economically advanced countries, and by some experiences of recent years in the development of China's poultry and livestock raising industry. Lacking a modern feed industry, there can be no production of scientifically formulated feeds, particularly of a complete line of full value mixed feeds able to satisfy the across-the-board nutritional needs of all kinds of poultry and livestock, and it is precisely just such quality feeds that constitute the indispensable material foundation for the modernization and factoryization of poultry and livestock raising. Before Liberation, China had no feed industry whatsoever. After Liberation, for various subjective and objective reasons, development of the feed industry has been rather slow. According to Food Ministry statistics as of the end of 1980, mixed feed plants with an annual output of more than 2,000 tons numbered only 137 nationwide, their total annual output capacity being only somewhat more than 1 million tons. Moreover, because of a lack of some needed ingredients, most of these plants were able to produce only a general line of mixed feeds; varieties were few and quality was poor, and far from being able to meet needs for developing the poultry and livestock growing industry. Production of various additives necessary for the formulation of full value mixed feeds, in particular, is still a virtual void in some cases. In order to change this backward state of affairs in China's feed industry, arduous work is required and a fairly long period of time will be required too. However, these problems must now be placed on the important agenda, and firmly taken in hand.

A modern feed industry is a comprehensive industrial system. It requires both production of numerous kinds of additives, and also production of numerous premixed feeds and full value mixed feeds. It touches on the different disciplines of nutrition and health, fermentation, chemical synthesis, medicine, and chemical raw materials of a highly scientific and technical nature and of fairly great difficulty. Furthermore, both raw material and investment requirements are also very great. What policies should China adopt for the development of a modern feed industry that are relatively suited to the country's circumstances, that require little investment, and that bring rapid results?

China has a population of 1 billion, of which 800 million are farmers, yet the poultry and livestock raising industry is run principally by individual commune member households in rural villages. Virtually all of the grain that commune member households engaged in the livestock raising industry require are grown by themselves using feed fields or private plots, augmented by coarse green fodder that they collect. For a long time to come, there will be no change in these circumstances. Therefore, development of China's feed industry must be done in accordance with this reality, and China must take its own path of development. We cannot follow the Japanese experience in operating large feed mixing plants with an annual output of several hundred thousand tons, nor can we follow the American experience of operating principally moderate size feed mixing plants. Inasmuch as China's farmers are themselves able to produce energy feeds (grains) and protein feeds (cake residues), what they lack is the various pre-mixed feeds made up of various additives that are indispensable in mixed feeds. Therefore, the proper course for our development of the feed industry should be: In addition to proper development of some full value feed mixing plants of different sizes by the suburbs of medium size cities and poultry and livestock production bases in accordance with the needs of state and collectively developed poultry and livestock feed farms, emphasis on the development of the feed additive industry and pre-mixed feed industries in order to meet the needs of the farflung rural villages in the development of the poultry and livestock raising industry.

Feed additives are of numerous kinds such as various kinds of vitamins, amino acids, trace elements, and growth promotion agents, all of which are indispensable to the manufacture of full value mixed feeds. With the addition to regular grain feeds of various additives, the transformation rate of feeds can be greatly increased, the feeding period shortened, and various poultry and livestock diseases prevented, thereby increasing the quantity and quality of poultry and livestock products, saving on feed, and reducing production costs.

Pre-mixed feeds are also termed enriched feeds in foreign countries. They are made by formulating scientific amounts of various additives that different kinds of livestock and poultry require for their growth and development. If poultry and livestock raising units (households) will simply mix the pre-mixed feed they buy with their own grain and cake residues in regulated proportions, they will produce full value mixed feeds.

In summary, without planned development of additive production, there is no use talking about modernization of the feed industry. By placing the emphasis of feed production on pre-mixed feeds, it is possible to effectively use the cereal grains and cake residues existing in rural villages, avoid hauling them back and forth, and reducing the cost of feeds and of poultry and livestock products. Therefore, development of this kind of feed industry will be fairly able to meet the situation of dispersed feeding in rural villages, and fairly well guarantee a market for the products.

9432
CSO: 4007/6

'JINGJI GUANLI'ON INCREASED INCOME DISTRIBUTION

HK300535 Beijing JINGJI GUANLI in Chinese No 8, 15 Aug 81 pp 13-16

[Article by People's Communes Administrative Bureau of Ministry of Agriculture: "Three Big Strides in 3 Years, Increased Output with Increased Income--An Investigation into the Continuous Big Increases in Distribution of Income Among Commune Members in Shandong Province"]

[Text] The rural villages of Shandong Province were relatively poor in the past, but during the period of cooperativization the income distribution level of the commune members was not low. In 1956, the average distribution of income among the commune members was 51.9 yuan per person. Compared with the national average at that time of 43.1 yuan per person, it was higher by 8.8 yuan, or 20.4 percent. Since 1958, the "leftist" guiding thought and errors in work have seriously affected the development of agriculture and the improvement of the livelihood of the commune members. It was not until 1976 that the average distribution of income among the commune members reached 57.6 yuan per person. Compared with the 1956 figure, the aggregate increase over a period of 20 years was 5.7 yuan, or an average increase per person of only 0.28 yuan a year. Why was it that the level of distribution of income among the commune members could not have a larger increase over such a prolonged period? We have made a comparison of the figures of production receipts, expenses, accumulations and consumption and found the following: In 1976, the gross income of the basic accounting units of the people's communes of the entire province was 7.326 billion yuan. This was an increase of 4.217 billion yuan over the income of 3.109 billion yuan in 1957, or an increase of 135.6 percent. In 1976, the gross expenses amounted to 2.846 billion yuan. This was an increase of 182.5 percent over 1957. The amount retained by the collectives was 0.609 billion yuan. This was an increase of 0.423 billion yuan over 1957, or an increase of 246 percent. The distribution among the commune members was 57.6 yuan per person, an increase of 23.10 yuan over 1957, or 66 percent. Obviously, over the 20 years the gross income increased rather sizably but the magnitude of the increases in expenses and in accumulation far surpassed that of the gross income. This meant large expenses and high production costs and accounted principally for the small distribution to the commune members.

After the 3d plenary session of the 11th Central Committee, the party committees and governments at various levels thoroughly implemented a series of guidelines and policies of the party. They criticized the "leftist" errors and gradually emancipated themselves from the yoke of "leftist" thought. Big changes were effected in the rural villages. In 1980, in regard to the collective economy

of the people's communes in the rural villages, the aggregate income of the production brigades and production teams amounted to 13.8 billion yuan, averaging 213 yuan per person. It was an increase of 17.9 percent over the preceding year. Since this followed an increase of 14.5 percent in 1978 and that of 15.6 percent in 1979, the increase in 1980 meant three big strides in 3 consecutive years. The following tables show the gross income, gross expenses, retentions by the collectives and income distribution to the commune members for the years 1977, 1978, 1979 and 1980 respectively:

	1977		1978	
	Amount (billion yuan)	Percentage of gross income	Amount (billion yuan)	Percentage of gross income
Gross Income	8.87532	100.0	8.84716	100.0
Gross Expenses	3.83878	43.3	3.40540	38.5
Retention by Collectives	1.04124	11.7	0.83540	9.4
Distribution to Members	3.78054	42.6	4.42901	50.1
Average Distribution Per Commune Member	58.6 yuan	--	68.4 yuan	

	1979		1980		
	Amount (billion yuan)	Percentage of gross income	Amount (billion yuan)	Percentage of gross income	Compared with 1977 (percentage)
Gross Income	10.19186	100.0	12.14872	100.0	36.8
Gross Expenses	3.65712	35.8	3.88069	31.9	-11.3
Retention by Collectives	1.06381	10.4	1.22286	10.1	17.4
Distribution to Members	5.29023	51.9	6.83344	56.2	80.0
Average Distribution Per Commune Member	81.5 yuan	--	105.2 yuan		79.5

Over the past 4 years, the income of the commune members increased by 46.6 yuan each, averaging an increase of 11.65 yuan each year. In particular, in the four districts of northwestern Shandong Province, traditionally known for their poverty, the increase in the income of the commune members was especially rapid. The income distribution to the commune members there increased from 50.9 yuan in 1979 to 87.4 yuan in 1980, or an increase of 36.5 yuan in a single year. Among these districts, the average income distribution to commune members in the Liaocheng district amounted to 126 yuan each. This was an increase of 71.2 yuan over the

preceding year, or an increase of over 100 percent. In the Dezhou district, the average income distribution amounted to 88.8 yuan per person, an increase of 38.7 yuan over the preceding year and an increase of 50.2 yuan, or 130 percent, over the year 1976. Many communes, brigades and teams were able to emancipate themselves and effect drastic changes within a year's time. They succeeded in changing drastically the long-standing status of "eating grain from the common pot, depending on loans for production work and living on relief." In the meantime, a number of enterprise units of relatively great affluence have appeared in the province. The number of counties in which the average income distribution amounted to 200 yuan per person has increased from 4 in 1979 to 12. The number of production brigades with average income distribution of over 300 yuan per member likewise increased to 698 from 47 in the preceding year. The highest income distribution amounted to 92.6 yuan per person and was found at the Xiao Cun Zhuang brigade, Wu Cun people's commune, in the Sifang district of Qingdao Municipality. Truly a picture of joy and happiness, seldom found for a long time, has been seen in the vast countryside.

Why was it that in the past 3 years, large increases have been made in collective production and in income distribution to the commune members? Concretely speaking, the principal causes were the following:

1. Adoption of Various Forms of Production Responsibility System Suitable to Local Conditions Which Greatly Aroused the Enthusiasm of the Masses

According to statistics as the end of December 1980, in the whole province the number of basic accounting units practicing the system of remuneration on a quota basis was 47.1 percent; those practicing the system of assigning responsibilities to each laborer and to each unit and linking remuneration to output accounted for 35.3 percent; and those practicing the system of assigning full production responsibilities to each household and the system of assigning full responsibilities for task completion made up 13.4 percent. Actual experience has shown that whatever the form of production responsibility system adopted it can still arouse the enthusiasm of the populace and promote increases in production and the practice of economy provided it takes into account the actual condition of the localities, fits in with the development level of the productive force and the management level of the unit concerned, is in line with the degree of consciousness of the populace and closely links production results with the individual interests of the commune members. In the Yantai area which is relatively affluent economically and where the standard of management is usually at a rather high level, the system in force for work on the farmland is assigning quota contracts for each unit or person; in the case of the forestry, animal husbandry, sideline products and fishery trades, the system in force calls for contracting by special trades and linking remuneration to output; and as for farm machines the responsibility system adopted calls for accounting on the basis of the individual machines. Clear-cut production increases were achieved. The income distribution to the commune members grew from 156 yuan in 1979 to 191 yuan per person, topping the whole province. In Xiajin County, the Tangdi production brigade of the Lilou people's commune had in all eight production teams. Among them, the seventh team adopted the system of recording quota workpoints, the eighth team adopted the system of linking remuneration to output for each unit, and the first to the sixth teams adopted the system of assigning responsibilities for a task until its completion to each

household. All of them reported increases in production and in income. The seventh team reported a per-mu yield of 110 jin of ginned cotton, an increase of 22 jin over the preceding year. The eighth team produced 100 jin of ginned cotton per mu, an increase of 14 jin. The first to the sixth teams turned out a per-mu yield of 90 jin of ginned cotton, an increase of 70 jin. In comparing the results of the majority of communes, production brigades and production teams planting cotton, it was found that the system of assigning responsibilities to each laborer and linking remuneration to output produced better results than a similar system of assigning responsibilities to each unit or group, and that "linking remuneration to output" worked out better than "not linking remuneration to output." Just as the people said: "Linking remuneration to output links hearts together and people feel concerned about their work." The system of linking remuneration to output can better arouse the enthusiasm of the commune members.

2. Readjusting the Internal Struggle of Agriculture and Putting in Full Play the Superior Points of Cotton and Peanut Production

Many localities in Shandong Province have conditions suitable for the development of cotton and peanut production. The province is the principal production area of cotton and peanut in the whole country. However, production of these two products has been stagnant for a prolonged period of time. As for cotton production, there were two main problems which still exist. One was that the state purchase price of cotton was too low. The other was that the grain ration given to the cotton farmer was too small. In 1950, the ratio of the price of cotton to that of wheat was 1:8.17 (meaning 1 jin of cotton could be exchanged for 8.17 jin of wheat); the ratio of the price of cotton to that of maize was 1:11.21. By 1975 the ratio of the price of cotton to that of wheat and maize had dropped to 1:6.83 and 1:9.7 respectively. At the same time, the problem of the grain ration of cotton farmers remained unsettled for a prolonged period of time. Many communes, production brigades and production teams had to buy grain at a high price from the country fairs. Each jin of cotton was exchanged for only 3.5 jin of wheat or 5 jin of maize. Thus, due to the low price of cotton and the lack of assurance concerning the grain ration of the cotton farmers, the communes, brigades and teams felt that cotton planting was a losing proposition and were unwilling to plant cotton. As a result, despite the fact that each year governments at various levels stressed grasping cotton production and went so far as to "severely criticize those who did not plant cotton and to urge the redoubling of efforts on all sides," it was difficult to fulfill the targets for cotton plantation areas and for cotton output. Whereas the state urged planting of "patriotic cotton," the communes, brigades and teams responded by planting "perfunctory cotton" instead. They would use poor land to plant cotton and generally declined to do any real work on cotton planting. In 1956, the gross cotton output of the province was 4.431 million tan. By 1977 it had shrunk to 2.975 million tan.

In order to heighten the enthusiasm of the communes, brigades and teams to plant cotton, in 1979 the state raised the purchase price of cotton by 15 percent. An additional subsidy of 5 percent was granted to growers in the northern part of the province. In 1980, the purchase price was again raised by 10 percent, and a special allowance of 30 percent was given to the portion of sales in excess of the state purchase quota. In this way, the price ratios between cotton and wheat and between cotton and maize became 1:8.26 and 1:11.79 respectively. At

the same time, concerning the grain ration of the cotton farmers, the method of linking cotton and grain and awarding grain for cotton sales in excess of the purchase quota was adopted. This method stipulated that for basic accounting units, each person contributing to the sale of an average of 10 jin of ginned cotton would be entitled to a grain ration of not lower than 365 jin. Thereafter, each additional jin of ginned cotton sold would receive an additional grain ration of 1.5 jin. It further provided that each person selling more than 20 jin of ginned cotton be guaranteed a grain ration of 380 jin and that thereafter, an additional contribution of 1 jin of ginned cotton would be rewarded with 4 jin of grain ration or 2 jin of chemical fertilizer. In the event that the grain ration reached over 600 jin, chemical fertilizer, and not grain, would be awarded. In this way, the communes, brigades and teams felt the advantages of cotton planting and their enthusiasm for cotton planting was greatly aroused. In 1980, the total area devoted to cotton planting in the whole province was restored to 11.05 million mu. This approached the highest level in history and was 2.91 million mu more than the preceding year. During that year, the peanut planting area was 9.36 million mu, an increase of 1.02 million mu over the preceding year. The cotton planting area in the four districts of northwestern Shandong was 8.34 million mu, an increase of 2.43 million mu over the preceding year. In the meantime, advanced production techniques were introduced and scientific planting methods of cotton were adopted. Thus, the area devoted to the planting of the choice seed of "Lu cotton No 1" increased from 1.2 million mu in 1979 to 8.68 million mu. Basically speaking, the use of superior and choice seeds was the general rule. Moreover, since the climatic condition last year was suitable to the growth of cotton and peanut plants, their output was greatly increased. The gross cotton production of the whole province rose from 3.33 million tan in 1979 to 10.74 million tan in 1980, an increase of more than 200 percent. Similarly, peanut production increased from 21.222 million tan in the preceding year to 28.086 million tan last year, an increase of 32 percent. Both the output from individual fields and that from all the fields reached the highest levels in history. Taking into account all the price additions, the gross income of the province from the sale of industrial crops, less 18.6 million yuan due to reduced income yield from the sale of grain, showed a net increase of 1.5 billion yuan, averaging a per-capita increase of 23.1 yuan.

3. Fully Utilizing Local Resources and Actively Developing Multiple-Line Business

In 1980, the income of the whole province from forestry, animal husbandry, sideline products and fishery increased by 330 million yuan over the preceding year. The average increase per capita was 5 yuan. Many years of experience have shown that fully utilizing local resources and actively developing multiple-line business constitute a principal way to increase wealth and to cure poverty in the communes, brigades and teams in the rural villages. It has been found that enterprise units devoting themselves to one trade but engaging in multiple-line business could produce more commodities, thereby enabling the collectives to enlarge their income and the commune members to receive a larger distribution of income. On the contrary, units confining themselves to one line of business were likened to "hanging themselves from a single tree." The economic development of the collectives would be slow and the commune members would receive a low distribution of income. Take the case of the Yantai area for example. Possessing a firm foundation of a stable and high grain yield, the area devoted great efforts

to developing multiple-line business. In 1980, the gross income from forestry, animal husbandry, subsidiary products and fishery amounted to 1.304 billion yuan, accounting for 42.3 percent of the gross income. The average per-capita distribution of income was 170 yuan, an increase of 40 yuan over the preceding year. A single unit of manpower in the area could create an income of 889 yuan a year which was 360 yuan higher than the average per-capita figure of the whole province. The sale of products netted an average per-capita income of 190 yuan, which was 106 yuan higher than the average figure for the whole province. The average per-capita share of the fixed assets was 302 yuan, 132 yuan higher than the average figure for the whole province. The average income distribution of the commune members was 191 yuan, which was 85.8 yuan higher than the average figure for the whole province. In the 12 counties in the province with an average per-capita income distribution of over 200 yuan each, the receipts from multiple-line businesses made up 49.2 percent of their gross income. Among the 698 production brigades with an average income distribution of 300 yuan per-capita, with the exception of the 149 production brigades in the 4 districts of northwestern Shandong Province, whose principal income was derived from cotton, the income of all the other brigades derived from the multiple-line businesses made up 70 to 80 percent of the gross income. On the contrary, in the eight counties with an average income distribution of less than 50 yuan, their income from multiple-line businesses (forestry, animal husbandry, subsidiary products and fishery) made up only 29.3 percent of the gross income.

4. Strengthening Management and Control and Reducing Production Expenses

On account of the disturbances and havoc wrought by the Lin Biao clique and the "gang of four," it became the universal practice not to count costs in production nor the effect of costs on making investments. The result was that the proportion of gross expenditures gradually increased every year. In 1971, it was 32.5 percent. By 1977, it had gone up to 43.3 percent. However, in more recent years, thanks to improvement in management and operation, the strengthening of business accounting and particularly the implementation of the various forms of the responsibility system, many communes, brigades and teams, when enforcing the responsibility system, fixed the expense quotas and the expense limits for the unit, household or individual. This, coupled with the state raising the state purchase prices of agricultural and sideline products, caused the labor productivity rate and the commodity production rate to increase every year. Conversely, the ratio of expenditures dropped year after year. Compared with 1979, in 1980 the economy effected in expenses amounted to over 400 million yuan. This was tantamount to an increased income of 7 yuan per person.

Correctly Handling the Relationship Between the Interests of the State, the Collective and the Individual and Suitably Readjusting the Ratio Between Accumulation and Consumption

In grain distribution, a ruling was made that beginning from 1979, state purchases would be made after the per-capita grain ration had reached 360 jin instead of 330 jin. Computation of retention and consumption would be based on net receipts. Generally speaking, the ratio of apportionment steadfastly adhered to was that taxes and retention by the collective would be about 20 percent of the net income while distribution to the commune members would be around 80 percent. In 1980,

the collective retention by the production brigades and production teams of the whole province was readjusted to 19.7 percent of the net income as against 21.9 percent in the preceding year, while the portion distributed to the commune members was raised from 75.5 percent to 77.5 percent. As a result of readjusting the ratio between accumulation and consumption, the average distribution per person was increased by 2.9 yuan. In the comparatively affluent units, the accumulation rate was slightly increased depending on actual need and possibility. This was meant to expand the reproduction capability and to make the commune members more affluent as soon as possible.

Judging from the results of the distribution of the income in 1980, there were certain problems deserving attention and study and needing solution:

(1) The large increase in the income of the farmers of the whole province last year was primarily due to the bumper cotton harvest. Nevertheless, the reduced grain output due to natural disasters made it impossible to carry out completely the policy of linking grain and cotton.

(2) Under the condition of a relatively large increase in the average income distribution to people of the whole province, we must not lose sight of the fact that there are over 90,000 basic accounting units, making up 23.8 percent of the whole, in which the collective distribution per person was below 50 yuan and that in some 54,000 units, making up 13.9 percent of the whole, no cash distribution was effected. In the whole province, there were still 100,000 units which did not produce enough grain themselves to effect a grain ration of 300 jin. This was about 23 percent of the whole. And, in the case of the four districts in northwest Shandong Province, it was about 50 percent. Hence, the important measures to raise the income distribution level for the province as a whole are to summarize the positive experience of the affluent production teams and to study and analyze the reasons for the poor teams' inability to make any progress, thus enabling a portion of the poor teams to speedily develop their production and increase their income.

(3) The ratio of forestry, animal husbandry, subsidiary products and fishery in the gross agricultural income not only has not increased but has decreased in certain localities, dropping from 37.2 percent in 1979 to 35.9 percent, or a drop of 1.3 percent. One reason was that the large increase in agricultural income had brought about a change in the ratio, but the principal reason was that the absolute figure of the income from the four trades had decreased compared with 1979 in such districts as Heze, Liaocheng, Dezhou, Huimin and Linyi. In 1980, these five districts put into full play their superiority in cotton production, and their agricultural income greatly increased. But their income from forestry, animal husbandry, subsidiary products and fishery amounted to only 938.88 million yuan, a decrease of 80.86 million yuan, or 7.9 percent. In particular, there was a sharp drop in income from subsidiary products and animal husbandry. In 1980, the bumper agricultural harvest and the large-scale production increase in cotton and the industrial crops in these districts were due primarily to the favorable climatic condition. In the event that the climate became unfavorable for the production of cotton and industrial crops, the volume of output would conceivably drop and the income distribution to the commune members would conceivably be decreased. For this reason, we must stick firm to taking

one trade as the principal pursuit, fully utilize the local resources, earnestly develop multiple-line business and continue to raise the commodity production rate. Only in this way can we ensure that the commune members' income will be stabilized and will rise gradually and can we make the communes, brigades and teams become really affluent.

(4) Concerning the three-party relationship, some communes, brigades and teams, even under conditions of increased production and increased income, have reduced the absolute figure of retention for the accumulation funds compared with the preceding year. Thus, in 1980, in the Huanhou production team of the Nanzhen people's commune of Gaotang County, the average income distribution per person was 310 yuan but the collective retention was only 361 yuan. Quite obviously, this was not favorable to the expansion of reproduction. Instances of this kind should be studied seriously.

(5) The problem of caring for the distressed households under the "five guarantees" and "four categories": some units currently adopted the system of fixing farm output quotas for each household, or assigning full responsibility for the task completion to each household, or assigning responsibilities to each laborer and linking remuneration to output did not take sufficient care of the households under the "five guarantees" and the "four categories" and other distressed households. Some units did not have the time to pay such attention to them. As a result, some of the people of distressed households had to leave their abode and seek a living elsewhere. Although this occurred only rarely, it was still a problem requiring urgent attention.

(6) In the case of units under the system of fixing of farm output quotas for each household or the system of assigning full responsibilities for task completion to each household, a suitable system and method for collecting statistics and accounting for the quantity of output and the amount of income and for doing a good job of financial management was still lacking. For this reason, the urgent problem before us now which must be studied and solved is how to seriously summarize and study the new situation, solve new problems and enable management and operations to suit the development needs of the new situation.

CSO: 4007/13

BRIEFS

FOOD INDUSTRY FORUM--Jinan, 23 Sep (XINHUA)--The ministry of agriculture recently sponsored a national forum in Taiwan County, Shandong, to review the situation in the commune- and brigade-run food industry in China. The participants concluded that China's rural areas have great potential for the development of food industry in view of the vast raw material resources, the existing processing techniques and the potential market. According to a survey conducted by the state statistical bureau, people in urban and rural areas respectively spend 60 and 70 percent of their total expenditure on food. The forum maintained that to speed up the development of China's food industry, the policy of procurement of agricultural and sideline products must be further relaxed in the rural areas. [OW231525 Beijing XINHUA Domestic Service in Chinese 0205 GMT 23 Sep 81]

POOR COUNTIES' INCOME--Beijing, 29 Sep (XINHUA)--According to the ministry of agriculture the 1980 per capita income from collective distribution for 21 of China's 221 poor counties neared or surpassed the 1980 national rural per capita income of 86.4 yuan, while 51 of the remaining 200 poor counties also made headway in raising the average commune members' income from collective distribution. Poor counties are defined as those with an annual per capita income from collective earnings under 50 yuan from 1977 to 1979 consecutively. Because of the party's rural economic policies, the 1980 rural per capita income from collective distribution for Chiping, Shenxian and Heze Counties in Shandong and for Luyi County in Henan increased to more than 100 yuan and that for Shandong's Gaotang and Xiajin Counties increased to more than 150 yuan. But China still has 149 poor counties where the rural per capita income from collective distribution remains below the level of 50 yuan. [OW231525 Beijing XINHUA Domestic Service in Chinese 0811 GMT 29 Sep 81]

CSO: 4007/10

BRIEFS

RESERVOIR CONSTRUCTION--Since the founding of the PRC, Sanming Prefecture, Fujian, has built a number of reservoirs with total water storage capacity of more than 100 million cubic meters. The reservoirs have turned 56 percent of the prefecture's farmland into land which guarantees good harvest irrespective of drought and flood. The prefecture has also built more than 1,500 small hydroelectric power stations with total power generating capacity of more than 110,000 kw. In 1980, the prefecture produced 1.86 billion jin of grain and its total industrial output value amounted to 1.22 billion yuan. [OW301655 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 28 Sep 81]

GRAIN PROCUREMENT--As of 24 September, Putian Prefecture, Fujian, had procured some 220 million jin of summer grain from the peasants, overfulfilling the state procurement quota by 70,000 jin. [OW301655 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 29 Sep 81]

CSO: 4007/9

BRIEFS

INDISCRIMINATE LOGGING--Indiscriminate logging is still serious in Wanning County in Guangdong Province. According to the statistics produced at the beginning of August, at least 1,500 people go to mountain areas to cut down trees each day. According to the estimate of the county forestry department, rate of increase of timber each year is around 60,000 cubic meters, but the consumption rate is 140,000 cubic meters. If the situation drags on like this, all the forests will be destroyed in 6 to 7 years. Wanning County recently set up a forest protection control office in order to curb indiscriminate logging and formulate appropriate measures. In addition to this, the county leaders appeal to various departments for cooperation in curbing indiscriminate logging in order to conserve forest resources. [Guangzhou Guangdong Provincial Service in Mandarin 2330 GMT 12 Sep 81 HK]

CSO: 4007/10

COMPREHENSIVE UTILIZATION OF TIMBER PROMOTED

Beijing RENMIN RIBAO in Chinese 20 Aug 81 p 2

/Article: "Heilongjiang Province's Forest Region Develops Comprehensive Utilization of Timber; Realizing Reduction of the Yield of Timber Without Reducing Production Value and Without Reducing Contribution to the State"/

/Text/ Editor's Note: The forest region of Heilongjiang has developed comprehensive utilization of timber in a big way, realizing a reduction in the yield without reducing promotion value or contributions to the state. This shows that forest regions have a great potential in the readjustment of the economy. To protect forests and develop forestry, the party Central Committee and the State Council have decided to gradually reduce the yield of timber so that the amount of timber felled does not surpass the amount of growth of the forest. In this situation, how can the enthusiasm of forestry enterprises and workers be developed and how can the supply of timber be assured? One good method is to develop comprehensive utilization of timber. When this work is done well, forestry can develop and the shortage of timber can be alleviated to a definite degree. The method of the forest region of Heilongjiang can serve as a lesson for the forest regions of each locality.

Reporter Tan Peiquan /6223 0160 0356/ reports: The forest region of Heilongjiang Province has actively implemented the policy of readjustment. With a yearly decrease in the yield of timber, it has developed comprehensive utilization of timber in a big way. The branches and bark that used to be thrown away and burned are now processed to make artificial board. Small pieces are processed to become useful wood and to substitute for the reduction in the yield of timber. Thus, the yield of timber has been reduced but the production value and the contribution to the state have not been reduced.

The forest region of Heilongjiang is an important timber production area in our nation. In the past, the policy of singular production of logs was carried out for a long time, thus resulting in overfelling and a drastic drop in forest resources. Of the 40 forestry bureaus throughout the province, the forest resources of 8 bureaus are already depleted and 25 bureaus have been forced to readjust to a reduced yield of timber. The enterprises face the difficult situation of loss. Since the Third Plenum of the party, Heilongjiang Province has proposed that the forest region shift the

central emphasis on production to an emphasis on forestation in order to create new forests and to implement comprehensive utilization of timber. In this way, the felling area can be reduced to conserve forest resources and also the gain from the forest region can be increased and unemployed youths can be employed. According to statistics, the entire province now has 993 comprehensive timber utilization plans (shops). The main products total 168 kinds and the total production value has reached 316 million yuan, constituting 24.2 percent of the production value of forestry. Last year, the whole province's forestry realized a profit of 125 million yuan, of which profits from comprehensive utilization amounted to 104 million yuan, equivalent to 1.6 times the profit from timber production.

Recently, the provincial government of Heilongjiang held a provincial comprehensive timber utilization meeting at the Tieli Forestry Bureau in Yinchun city to further summarize the historical experience, establish development plans for the next 3 years, call upon the broad ranks of forestry workers to bring out the old spirit of timber production to carry out the work of comprehensive utilization of timber well and to push this newly established industry one step further. First, regarding the utilization of raw materials, previously the three remnant materials were mainly wasted (branches remaining after felling in the forest region, pieces of wood remaining after forestation, and bark and scraps of wood remaining after processing and sawing wood). Now, the percentage of utilization of the "three remnants" has increased from 25 percent in 1979 to 25.2 percent. This percentage has reached about 34 percent in the Yinchun forest region, which has the highest percentage of utilization. Second, the direction of the products of comprehensive utilization of timber has changed from the production of small boards and similar raw material products in the past to the production of products urgently needed in the light industry market, such as new and inexpensive but beautiful floor type lamp supports, coat hangers, clothes and basin hangers, and cases for radios, television sets, floor model speakers and such new products. Third, while not increasing the state's investment, the forest region relied on the collective ownership economic system, and used the "snowballing" method to accumulate capital to hasten the speed of development. Now, there are 152 factories that have preliminarily formed a productive capability in the forest region, producing 35 kinds of products with a production value of 180 million yuan, constituting 1.3 times the production value of comprehensive utilization of timber by the state-run enterprises. Intellectual youths employed in comprehensive utilization and production of timber number 56,000, constituting 24 percent of the total number of intellectual youths employed.

9296
CSO: 4007/570

BRIEFS

FARM PRODUCT PRICES--Harbin Municipality, Heilongjiang Province, is imposing price restrictions on 27 farm products including vegetables, meat, chicken, fish, rice, soybean oil and fruits sold at 34 farm product markets in the city 29 September to 3 October. The restriction is being imposed to check spiralling prices. The Harbin No 2 commercial bureau urged personnel in charge of market administration to intensify investigations of the quality of farm products marketed, prevent adulterated goods from being marketed and ensure that retailers abide by laws and conduct business transactions honestly. [SK301110 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 29 Sep 81]

FALL HARVEST RESULTS--Autumn harvest is in full swing in rural areas of Heilongjiang Province. By 29 September, the province had harvested 31 million mu of field crops, 36.8 percent of the field crops to be harvested. Because of floods, the autumn harvest has been delayed in most areas of the province. Various localities are now concentrating on harvesting soybeans and other crops. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 1 Oct 81 SK]

CSO: 4007/10

BRIEFS

TOBACCO TRANSPORTATION--Working in coordination with the Henan Provincial Economic Committee and supply and marketing cooperatives, the Zhengzhou Railway Bureau has actively organized transportation of tobacco leaves in order to assist light industrial production. Henan Province has reaped a bumper harvest of tobacco leaves this year and the amount of required transportation is expected to increase by 100 percent. By the end of August, some 8.1 million tobacco leaves had already been transported to Beijing, Tianjin and Shenghai to assist production of light industrial products. [Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 14 Sep 81 HK]

FORESTRY PROTECTION CIRCULAR--Recently, the Henan Provincial CCP Committee and the Provincial People's Government issued a circular on implementing the state council's decision on forestry protection. The circular consisted of 10 points: 1) stipulate rights to occupy mountain and forest areas; 2) establish and perfect the production responsibility system of forestry; 3) strengthen protection of forests and popularize knowledge of forestry and the legal system; 4) practice rational lumbering and strengthen management of timber; 5) vigorously promote afforestation and increase the area of vegetation in the province by 15 percent by 1985, 20 percent by 1990 and over 25 percent by the end of this century; 6) readjust the proportions of agriculture, forestry, animal husbandry, sideline occupations and fisheries in light of local conditions; 7) run well state, commune and brigade tree farms; 8) develop education in science and technology regarding forestry; 9) set up a system of raising funds to assist development of forestry; and 10) strengthen party and government leadership pver forestry. [HK280910 Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 10 Sep 81]

FARM OUTPUT--Dengfeng County, Henan, in 1980 delivered to the state 25 million jin of grain, either turned in as tax in kind or sold as surplus grain. In 1981, the country yielded 10 percent more wheat than in 1980. It is growing 120,000 mu of tobacco and the output this year is estimated to be around 37 million jin. [Beijing Domestic Service in Mandarin 1200 GMT 27 Sep 81]

CSO: 4007/9

BRIEFS

COTTON HARVESTING--As of 23 September, peasants in Yancheng Prefecture, Jiangsu, had picked more than 994,000 jin of unginned cotton. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 28 Sep 81]

CSO: 4007/9

BRIEFS

COTTON OUTPUT--Duchang County, Jiangxi, this year reaped 75,000 dan of cotton from its 100,000 mu of cottonfields. This year's cotton output is 6,000 dan more than the 1980 output. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 29 Sep 81]

INDUSTRIAL CROPS--Shangrao Prefecture, Jiangxi, has increased its acreage for industrial crops this year by 250,000 mu as compared with last year. The prefecture has also expanded acreage for tea gardens by 49,000 mu. As a result, the prefecture's total tea leaf output this year has reached 98,000 dan. In addition, the prefecture has bred over 300 million fry in lakes and ponds. Output of aquatic products has reached 170,000 dan. Yshan County raises 143,000 long-haired rabbits as sideline production. [OW011335 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 30 Sep 81]

CSO: 4007/9

BRIEFS

SEED SELECTION--Jilin Province has scored achievements in selecting seeds this year. According to statistics compiled on 30 September, the province has selected 97,300 tons of various fine grain seeds, 32 percent of all stored seeds. [Changchun Jilin Provincial Service in Mandarin 2200 GMT 30 Sep 81 SK]

CSO: 4007/10

COMMUNE'S IMPLEMENTATION OF RESPONSIBILITY SYSTEM DESCRIBED

Beijing RENMIN RIBAO in Chinese, 20 Aug 81, p 2

/Article: "Ten Questions Concerning the Responsibility System--A Survey of Zhongtan Commune in Togtoh, Nei Monggol"/

/Text/ Zhongtan Commune of Togtoh County in the Inner Mongolia Autonomous Region is situated on the north bank of the Yellow River. The soil is fertile, irrigation is convenient, and natural conditions are good, but because of the method of "eating from the big pot" in business management, it remained poor and backward for a long time and became "a three dependent commune." In 1980, this commune implemented the business management method of "the big contract" and has relatively quickly shaken off the state of poverty. This change also brought about some new situations and new questions. The Zhongtan Commune mobilized the masses, started out from the actual situation of the locality, and found methods of solving some new problems by adhering to the principles of facilitating the development of production, facilitating consolidation of the collective economy and facilitating the commune members, adhering to the spirit of the state and unifying those things which can be unified and separating those things which can be separated.

In general, the commune has answered the following 10 questions:

1. How are draft animals raised, managed and used? They started out from facilitating the use and aiding the protection of collective property, and use the method of "pricing the animals and assigning them to the commune member families, which are given the power to manage and use the animals." The commune members carry out democratic discussion and evaluation to establish a price that is slightly lower than the market price. After the commune members receive the draft animals, they can trade the animals in for more suitable draft animals. But when one animal is sold another must be bought, and the price cannot be lower than the price of the animal sold. Before new animals are bought, the money for the animals must be deposited in the bank and cannot be used for other purposes. Now, the raising, management and use of draft animals have all improved greatly.

2. How are tractors, automobiles and large items of farm equipment managed? They have implemented "contracting the equipment to the person, accounting for individual equipment, accounting wages in joint production, and rewarding surplus production." For example, the Xiatan Brigade has contracted tractors to the operator for management, reduced the cost, and the planting cost per unit of machinery has dropped from 1 yuan to 0.8 yuan.

3. How are medium and small items of farm equipment managed and used? The plow, the drill, rake, rod and such small farm tools are priced and sold to the commune members. The money is then deposited in a bank and it is not allowed to be used for other purposes. Rubber tired carts, rice milling machines and flour milling machines are uniformly managed by the production team. The commune members use them for a fee. If they are damaged, they must be paid for according to their price. Commune members who use the buildings and the machinery of the collective to carry out such sideline production as flour mills and bean curd mills must pay a management fee and a depreciation fee to the production team. This has provided convenience to the production and the life of the commune members and has avoided loss, damage and waste of collective property.

4. How are large-scale farmland water conservancy projects carried out? They use "unified planning, unified construction, distribution of duties to families according to the amount of the gain, and completion according to schedule." In this way, the duties are clear, the responsibilities are concrete, and the results have been good. Last year, the rechanneling of the Dahei River, a project involving moving 380,000 square meters of earth, was completed. A drainage canal was dug and small ditches were cleaned and repaired. Up to now, the "most difficult" water conservancy project has been that of the Heshang Yingzi Brigade. On the second day after the project was commissioned, over 100 laborers went to the site. Some commune members spent the night rushing to the construction site and quickly completed the task of construction.

5. How are machine planting and irrigation carried out? Attention is given to three points: One is that distribution of land adheres to the past practice of zoning large patches of land to facilitate machine planting. The second is to plant crops in zones. Before sowing, the production team proposes a planting plan. The plan is subjected to democratic discussion by the commune members to determine the plots and the crops. Each family carries out planting according to the planting plan determined by resolution. Practice has shown that most commune members are willing to plant according to the plans decided on by the collective. The few who refused at first were able to change their minds after working. The third is to collect machine planting fees and irrigation fees. Each family pays for a share according to the gain. Fees are prepaid before machine planting and irrigation are carried out. Those who refuse to pay the fees are not given machines for planting and for irrigation. In this way, the area of machine planting and the area assured of irrigation have been expanded. The individual, the collective and the state do not owe anyone anything.

6. How is food grain procurement carried out? There are five links: 1) In spring when contracting for land, the 5-year contract plans for the task of producing food grains to be sold to the authorities and the task of producing varieties of food grains are given to the families without being changed so that the commune members will know how much must be submitted at year's end, what varieties are to be submitted, and the amount of food grain crops to be arranged for the whole year. 2) Purchase of food grains after autumn is realized according to contracts. 3) Farming taxes are strictly collected. The amount of food grains submitted is determined by the amount of taxes to be paid in accordance with the demands of contracted production and tax requirements of the land. Payments affecting rations of food grains are reimbursed by returned sales. 4) The amount of production reduced because of disasters, incomplete contracts, and deductions must all be discussed and resolved by discussion in the meeting of the entire commune membership. 5) The work of "individual families" has

been done well. The very few families that have had food grains on hand and have not submitted food grains according to contract stipulations have had to explain their reasons to the entire commune membership, then the commune members have carried out discussion and evaluation. After doing this, last year, the entire commune's food grains procurement task was completed quickly and well. The task of procuring 500,000 jin set by the state was completed by submitting 730,000 jin, and 70 percent of this amount were superior quality food grains.

7. How is public savings withheld? According to the size of the contracted land, each year, 1 to 3 yuan are withheld as public savings and public welfare benefit funds from every commune member contracting a full quota of land. Withholdings from commune members not contracting a full quota of land are less.

8. How are triangular debts cleared? The portion of the loan owed to the state by the collective is placed under the names of the commune members according to how much the commune members owe the collective. The commune members are required to repay the debt in full in 5 years, repaying 20 percent each year. The interest is paid by the collective. Those who do not repay the debt according to plan will have to pay the interest on the amount of the yearly debt by the commune individuals themselves. After transferring the accounts, the loan still owed to the state by the collective is paid from the income from the collective's sideline production.

9. How are the lives of the five guaranteed households and the four category families taken care of? These families can be given full land quota contracts, partial land quota contracts or not given any land contracts according to their individual situations. Regardless of whether they contract for the land or not, the state and the collective should give them the proper benefits in accordance with the policy and should take care of them as usual.

The five guaranteed households contracting land are not given tasks for submitting their yields and their income is not subjected to withholdings. All products belong to the households. The five guaranteed households not contracting land are given rations of food grains by the production teams; the standard ration should not be less than 400 jin.

The four category families that contract less land with insufficient rations can buy rationed food grains from the production team (because these families have extra economic income); payment should not be delayed nor should overpayments be made.

10. How are production team cadres and civilian teachers subsidized? After implementing the "major contracts," the cadres also contract pieces of land. Regarding subsidies, this commune changed the past work point subsidies to cash subsidies. The party branch secretary, brigade commander and accountant of each brigade is given a subsidy of not less than 200 yuan each year. Subsidies for the production team leader are not less than 100 yuan a year. Other concurrent cadres are subsidized for actual absence from labor. Civilian teachers receive state subsidies of no less than 30 yuan a month per person. The capital for subsidies mainly comes from income earned by sideline production of the commune and the brigade. The shortage is solved by using the withholdings of the collective. In 1980, this commune reduced the number of cadres enjoying subsidies by 50 percent.

Zhongtan Commune reduced the cost of production, consolidated the collective economy, and improved the standard of living of the commune members by solving these 10 problems. Last year, the yield of food grains of the entire commune was double that of 1978. The production cost dropped by 12 percent. In 1978, the commune consumed 2.3 million jin of food grains resold by the state. The per capita income reached 100 yuan. The entire commune also purchased seven large farm machinery units and over 200 head of farm animals.

9296
CSO: 4007/570

BRIEFS

COTTON CROP LOSS--Xian, 24 Sep (XINHUA)--Recent floods in Shaanxi destroyed some 89,000 mu and inundated more than 147,000 mu of cotton fields in Weinan Prefecture. Of the inundated cotton crops, some 80,000 mu will yield no harvest at all this year. Cotton peasants in the prefecture are striving to combat the floods in order to minimize cotton crop losses. The prefecture this year grew 2.07 million mu of cotton, which accounted for more than 50 percent of the total cotton area in Shaanxi Province. [OW051141 Beijing XINHUA Domestic Service in Chinese 0139 GMT 24 Sep 81]

CSO: 4007/10

BRIEFS

HUIMIN PREFECTURE DROUGHT--Huimin prefecture, Shandong Province, has been seriously plagued with drought in autumn sowing. In addition to holding an antidrought rally to arouse the broad masses of cadres and the people to go into action immediately, principal responsible personnel of the prefectural CCP committee and administrative office have led the masses to go deep into irrigation areas to support autumn sowing by carrying out irrigation operations. The industrial and communications, financial and trade and agricultural departments under the prefecture have also organized work groups to deliver funds and materials for the operation. By 25 September, the prefecture irrigated 1.89 million mu of farmland and sowed 1.1 million mu of wheat. [SK300414 Jinan Shandong Provincial Service in Mandarin 2300 GMT 28 Sep 81]

CSO: 4007:10

MEASURES FOR GAINING CONSISTENTLY HIGH LATE RICE CROP YIELDS OUTLINED

Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 5 Aug 81 pp 1-3

[Article by Shanghai Municipal Farm Skills Promotion Station: "Tentative Discussion of Measures for Consistent Yields of Late Crop Rice in Suburban Areas"]

[Text] 1980, when late rice crop yields throughout the city amounted to 362 jin per mu, produced the lowest yields since the promotion of the three crop system. A survey showed the structure of output to have been: 284,200 effective panicles per mu; grains per panicle totaling 54.95; an empty husk rate of 38.62 percent, and a per thousand grain weight of 24.73 grams. Comparison with average figures for the six previous years showed a decrease of 74,200 effective panicles, an increase of 7.77 grains in the total number of grains per panicle, a 20.45 percent increase in the empty husk rate, and a 1.92 gram reduction in the per thousand weight of grains. Everyone is aware that the output of paddy rice and changes in the number of panicles, the number of grains, and the grain weight, in addition to being decided by the hereditary characteristics of the variety itself, are related mostly to environmental conditions throughout the growing period. Thus, conscientious analysis of the relationship among climatic conditions, the situation in planting and care, and growth and development of the late rice crop are extremely important in assimilating the lessons of experiences in disaster years, and in establishing farming methods for consistent output in normal years.

Effects of Climatic Conditions on Late Crop Rice

In 1980, climate was abnormal. During the growing season for the late rice crop, temperatures were low; skies were overcast; and sunshine was scant. Data from the Municipal Meteorological Bureau shows that from mid-June until late October, effective accumulated temperatures above 10°C amounted to 1910°C, 74°C less than for most years. Amount of rainfall stood at 924 millimeters, 304 millimeters more than for most years. Sunshine was particularly lacking, amounting to 969 hours, 207 hours less than for most years. All this was extremely disadvantageous for growth and development of the late rice crop. A simple analysis for each stage follows.

1) Seedling propagation stage. Between mid-June and late July, effective accumulated temperatures were lower than normal. Overcast and rainy days totaled 32, 7.5 days more than in ordinary years. Quantity of precipitation was 77.7

millimeters more than normal, and sunshine was 105 hours less than normal. The plum rains began early and lasted a long time. Sowing of the late rice crop was everywhere delayed. In Jinshan County, it was delayed for three or four days, and in Nanhui County, some late geng varieties were not sown until around 20 June. In order to be able to plant more early rice, some communes and brigades retained fewer seedling fields, and used an increase in quantities sown to shorten seedling age, while at the same time restricting fertilizer and water, and preventing close planting and burgeoning growth of plants. This, plus the long period of overcast and rainy weather following planting, impaired the healthy growth of seedlings. Data from five counties in Songjiang and Chuansha shows from 3.72 to 4.33 green leaves per individual seedling at the time of transplanting, a width at the base of seedlings of 0.48 to 0.58 millimeters, and a dry weight of individual plants of 0.20 grams. This represents a decrease of 0.10 to 0.88 leaves per plant as compared with 1979, a 0.02 to 0.09 millimeter reduction in width at the base of seedlings, and a decline by about 0.10 millimeters in the dry weight per plant. When quantity sown was fairly great, seedlings were spindly and weak.

2) The tillering to booting stage. Comparison of climatic conditions between early August and mid-September with normal years shows a 95.6°C reduction in effective accumulative temperature, 12.2 more days of rain, a 327 millimeter increase in amount of rainfall, and a 133.6 hour reduction in the amount of sunshine. During August, temperatures averaged 24.8°C; rainfall amounted to 455 millimeters, and there were 108 hours of sunshine for a chilly and rainy summer such as has not been seen in 100 years. Farming was conducted as for years when climatic conditions were good. Major manifestations were a delay in transplanting. Rice transplanted throughout the city after Liqiu [7 August] amounted to 47.5 percent of the total, 20 percent more than in 1979. Second, density of transplanting tended to be sparse and the number of basic seedlings few. Density of late rice planting throughout the city was about 40,000 holes per mu containing 281,900 basic seedlings. Investigative data from Fengxian for the past several years shows this year to have been the one of sparsest density of plantings and the fewest basic seedlings (See Table). Third, the basic fertility of some fields was inadequate, and top dressings of fertilizer were not applied promptly, as a result of which plant growth was slow after planting. During the Limit of Heat period [around 23 August], the number of tillers totaled only 359,500 per mu, and the shortness of plants, slow leafing, and delayed transplanting were particularly noticeable. Examination during the Limit of Heat period in Jiading County of the late rice crop that had been transplanted after Liqiu [7 August] showed plants to be 1.43 centimeters shorter, the number of green leaves per stem to be 0.25 fewer, and the leaf surface coefficient to be 0.95 less than for the same period in 1979. Leaf ages for "Jianong 485," "Jianong 762," and "Guizhino" were 1.72, 1.16, and 1.56 less respectively. Numerous communes and brigades did not act in accordance with meteorological forecasts. Concerning themselves only with hastening the growth and development of the late rice crop, they applied another substantial amount of chemical fertilizer after the Limit of Heat. This caused an "overall dark" appearance, and delayed development. Because of the early onset of overcast and rainy weather with low temperatures, cold damage was increased.

Density and Number of Basic Seedlings For Late Rice Crop in Fengxian County

	1976 - 1980				
Year	1976	1977	1978	1979	1980
Density per 10,000 holes	4.29	4.02	3.98	3.75	3.63
Basic Number of Seedlings	37.48	30.6	32.03	28.04	28.01

(10,000/mu)

3) The heading, flowering, and in the milk stage. Between late September and late October, effective accumulated temperatures, rainy days, and amount of rainfall were about the same as in normal years. Sunshine was 18.5 hours less than in normal years, but principally low temperatures arrived early (beginning on 19 September), and the period of low temperatures and rainy weather was long. Daily temperatures averaged as low as 20°C, and maximum temperature was as low as 23°C, the minimum temperature being around 17°C. Such weather had not been seen for 100 years, and it seriously impaired the flowering and pollination of the late rice crop. Meanwhile, the appearance of continuous overcast and rainy weather caused serious outbreaks of rice neck-blast disease, causing losses of about 110 million jin. Delayed application or heavy applications of fertilizer induced excessive growth of rice, causing even greater damage. A survey done in Shanghai County showed the plant disease rate when 100 to 110 jin of chemical fertilizer (converted to quantity of ammonium carbonate) per mu was used to be 8.32 percent. The plant disease rate when about 160 jin was used was 55.4 percent. When about 180 jin was used, the plant disease rate was 65.05 percent. In addition, the plant temperatures during the in-the-milk stage were less than in normal years, and an early frost occurred on 26 October, causing definite impairment of seed weight.

Technical Measures for Consistent Output from the Late Rice Crop

Years since Liberation in which effective accumulated temperatures have been as low as during 1980 have included 1957, 1972, and 1974. However, even in 1974 when heat conditions were so poor, the late rice crop produced yields of 605 jin per mu, and in 1980, there were also some high yield fields that produced yields of from 700 to 800 jin per mu. The experiences of many years tell us of the need to apply successful farming experiences to the growing of late crop rice in accordance with the laws of climatic change. If we rely only on the experiences gained during one or two years of particularly fine weather conditions to guide production, it is very possible that a crop failure may be caused as a result of the use of technical measures that are inappropriate to the temperature conditions of a given year. According to an analysis done by the Municipal Academy of Agricultural Sciences, beginning on 16 September, the Shanghai area may sustain low temperatures for three days or more during the flowering period. For late crop rice that reaches full heading before 18 September, in four years out of 100 more than three days in a row

of average daily temperatures as low as 20°C have occurred. For five years, there were more than two days during the 11 days before full heading when minimum temperature was as low as 17°C, causing impairment in meiosis and a damage rate from low temperature of 9 percent. Full heading on 20 September took place for 10 years and seven years respectively, one year of which had damage from low temperatures on two occasions for a low temperature damage rate of 16 percent. Full heading prior to 22 September occurred for 12 years and 13 years respectively, four years of which saw damage from low temperatures on two occasions for a low temperature damage rate of 21 percent. If full heading is delayed until 23, 24, and 25 September, the low temperature damage rate becomes 27, 34, and 42 percent respectively. It is necessary, additionally, to know how high accumulated winter and springtime temperatures are during the growing season for wheat, barley, and naked barley. Data from the Municipal Agriculture Meteorology Institute shows that if effective accumulated temperatures of above 3°C are lower than 1350°C between mid-November to late May, ripening of wheat, barley, and naked barley will be delayed, and the transplanting and ripening of early crop rice will be commensurately delayed as well, and in years of low accumulated winter and springtime temperatures, generally low temperatures during the autumn system will come early.

In view of the aforestated climatic laws, technical measures for consistent yields from the late rice crop requires mastery of the following several points.

1) Distribution of varieties and rotation of crops must be in accordance with the season. The safe full heading period for late crop rice requires that full heading occur prior to 22 September if losses from low temperatures and cold damage are to be reduced, consistent yields assured in disaster years, and bumper yields obtained in normal years. A fine harvest was reaped from the 1974 late rice crop, thanks largely to the distribution of crop varieties, and fairly good arrangements for crop rotation. In the case of the early rice, for instance, exceptionally early varieties accounted for 12.7 percent; early ripening varieties accounted for 55.6 percent; medium ripening varieties accounted for 18.9 percent; and late ripening varieties accounted for 12.8 percent, creating conditions for the early transplanting of the late crop rice. In 1980, by contract, exceptionally early ripening varieties in the early rice crop were extremely scarce, and early ripening varieties accounted for only 9.5 percent. Medium ripening varieties amounted to 65.1 percent, and late ripening varieties accounted for 25.4 percent. As a result, late crop rice could not be transplanted at a suitable early date. More than 400,000 mu, or about 20 percent, had to be transplanted after 10 August. As a result, henceforth, except for some communes and brigades with a lot of land relative to workforce that will want to adjust the three crop and two crop system of planting in accordance with realities, most communes and brigades will mostly have to make arrangements for a proportion of varieties of crops that ripen at different times in a three crop system, with medium ripening varieties being paramount and matched up with different proportions of early ripening and late ripening varieties. Arrangements for wheat and early rice varieties must be made so as to provide for some early sowing of the late rice crop. Cropping arrangements for the year must be mostly early (early ripening barley and naked barley), medium (medium ripening early xian rice), and late (late maturing late crop geng rice), plus arrangements for some early (early ripening barley and naked barley), early (early ripening xian rice), late (late ripening late crop geng rice), and early (early ripening barley

and naked barley), medium (medium ripening early xian rice), and medium (medium ripening late crop geng rice). Distribution of varieties and crop rotation of late crop rice must proceed from the principle of "seeking high yields when consistent yields have been attained." In addition to providing for medium ripening late geng varieties, it is necessary, as well, to provide for a certain proportion of medium geng and late xian. Selection should be made of varieties with a short growing season that are fairly resistant to cold and diseases and have fairly good bumper output characteristics so that full heading may safely take place under disadvantageous climatic conditions and consistently high yields be obtained.

2) Propagation of good seedlings to make up for insufficient open field growing season. At the present time, most late season rice is late geng varieties that are sensitive to a shortage of illumination, and which when grown as a late rice crop have a delayed sowing season. When subjected to high temperature conditions, the nutrative growth of seedlings is accelerated and the time shortened: consequently temperature becomes a major element affecting growth and development of late season rice. Observations made between 1973 and 1977 by the Sanlin Commune Meteorology Outpost in Shanghai County show that accumulated temperatures of above 10°C required for Shuangfeng No 1 from the time of sowing until full heading amount to from 1470 to 1490°C. Thus, suitably early sowing can assure effective accumulated temperatures between sowing and full heading, and the safe attainment of full heading, which can both make up for inadequate vegetative growth, and gain remarkable benefits in consistent yields. In 1980, the Yingfang No 1 Brigade of Caojing Commune in Jinshan County had 135 mu of "Guinong 12," of which 70 percent had been sown before 16 June, and which had been transplanted on time and suitable cared for. Between 14 and 16 September it formed heads for per unit yields of 719 jin. Conversely, the Hongqi No 7 Brigade of Luxiang Commune in the same county had 164 mu of "Guinong 12," 70 percent of which had been sown after 20 June. As a result, heading occurred after 20 September; there were numerous raised panicle heads; and per unit yields were only 68 jin. It should be noted that early sowing and delayed transplanting at a long seedling age frequently results in "small panicles," requiring use of the method of sparse sowing for strong seedlings to resolve the conflict between early sowing and delayed transplanting. Promotion of the experiences with branching twice of Jiading and Qingfu can also solve the problem of excessive seedling age in the "final" rice crop. By this is meant retention of numerous seedlings from the first branching at a rate of 60 to 70 plants per chi, and then tending them for six or seven days so that the rice seedlings grow somewhat sturdy. When the "final" seedlings are transplanted, seedlings may be culled to leave only 25 to 30 plants per chi. In this way, the seedlings of the late rice crop whose transplanting has been delayed amount to "two stage propagation of seedlings," and can produce high and consistent yields.

3) Increase in transplanting quality, making full use of the growing season. If the quality of transplanting is good, all the rice seedlings that are planted will survive. This amounts, in effect, to lengthening the vegetative growth period to lay a foundation for winning high yields. In order to increase quality of transplanting, the first requirement is "earliness." Experiments conducted by the Municipal Academy of Agricultural Sciences show that when "Jianong 15" is transplanted between 31 July and 12 August, for every day of delay, output will be reduced by 27 jin per mu. The second requirement is to establish environmental

conditions for early survival and early development. Quality of soil cultivation must be good, organic fertilizer must be well composted, basic fertilizer must be adequate, and miscellaneous manures must be well mixed. The third requirement is transplanting in the afternoon and shallow transplanting. When transplanting is done after 3:00 p.m., high temperatures are on the wane, and new roots will begin to appear overnight in a process that is virtually free from failure. Shallow transplanting means rapid growth. Observations show that when seedlings were planted between 2 and 3 centimeters deep, growth occurred within three days; when planted between 4 and 5 centimeters deep, growth took seven days; when planted 7 to 8 centimeters deep, growth required 10 days. The fourth requirement is reasonably close planting and the transplanting of a sufficient number of basic seedlings. By so doing, if climatic conditions are good, growth will occur rapidly and the number of panicles will be increased. If climatic conditions are poor, a certain number of panicles will develop to assure consistent yields. Ever since 1974, the number of effective panicles on the late rice crop in the suburbs has declined from around 400,000 to 284,200 in 1980. This has resulted primarily from a reduction during the past two or three years in the number of transplants per mu and in the basic number of seedlings. As a result, the density of transplanting of the late rice crop has generally been from 45,000 to 50,000 transplants per mu and about 300,000 basic seedlings.

4) Intensification of fertilizer and water management to make sure of early development and steady growth to keep apace of the season. The absorption of fertilizer by late crop rice takes place early and is more concentrated than for single season late rice. In applying fertilizer, the principle of "sufficient basic fertilizer and rapid follow-up applications of fertilizer" must be mastered. The method for application is as follows: supposing the basic applications of fertilizer to be adequate, early transplants should be given a follow-up application and a supplemental application. Mid-season transplants should be given a single application; and transplants put in after Liqiu [7 August] should have "three fertilizers," (basic fertilizer, topdressing of fertilizer, and a follow-up application of fertilizer). Usualiy no further applications of fertilizer are made after 20 August. There should be management of field water, and use being made of water to regulate the amount of fertilizer reading plants. Depending on the condition of the seedlings, the soil, and the weather, water should be drained from the fields at the right time to promote early development and rapid growth to establish conditions for bumper yields before the advent of the Limit of Heat [around 23 August]. With consistent growth in mid season, development of healthy plants, and a smooth transition into reproductive growth, early heading can occur and full heading come about safely. If this does not happen, the situation will run counter to one's desires. In 1980, the weather caused very poor growth of the late rice crop, and in many places fertilizer was applied too late or in too large amounts causing plants to remain in the vegetative growth stage and delaying ripening. This both impaired safe full heading and opened plants to danger of neck-blast of rice, seriously impairing output. This merits attention. However, one cannot positively suppose that fertilizer may in no case be applied after 20 August. In 1978, in view of the high temperatures and lack of rainfall, the Linjiacao Brigade in Qingfu County made a general application of fertilizer for the booting stage, and on a small number of plots, fertilizer was applied for the opening of anthers. As a result, large areas of the late rice crop produced

increased yields. In 1980, moreover, faced with a threat of freeze damage, this brigade applied booting fertilizer and anther-opening fertilizer to most of its late rice crop, again obtaining a rather good harvest. Quite obviously, late applications of fertilizer to the late rice crop must be done with full understanding of the growth situation of the rice, increased yields being obtainable only through suitable applications made on the basis of meteorological forecasts for the booting, heading, and in-the-milk stages.

9432
CSO: 4007/2

BRIEFS

TAIZHOU PREFECTURE ECONOMIC DIVERSIFICATION--Taizhou Prefecture, Zhejiang has developed a diversified economy. From January through August this year, the total value of agricultural and sideline products procured in the prefecture reached 170 million yuan, an increase of 79 percent over that before the 3d plenary session of the 11th Party Central Committee. Since May 1980, the prefecture has been building 10 commodity-producing bases, including a cash crops base, timber forest base, livestock base, fruits base, economic forest base, special forest products base, fish culture base, export products base, vegetable base and salt base. [Hangzhou Zhejiang Provincial Service in Mandarin 1040 GMT 4 Oct 81 OW]

AGRICULTURAL PRODUCTION--The peasants in Ningbo Prefecture, Zhejiang Province, reaped a bumper harvest of early rice this year. The total output of early rice was 170 million jin more than that of 1980. The peasants in the prefecture have also promoted diversified farming operation and now the value of agricultural production in the prefecture. [Hangzhou Zhejiang Provincial Service in Mandarin 1040 GMT 2 Oct 81 OW]

CSO: 4007/10

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TITLE: "Relationship Between the Yield of Cotton and Irrigation-Drainage"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 5 Aug 81 pp 11-13

ABSTRACT: In large acreage production, the yield of ginned cotton is closely related to the amount of rainfall during the growth season. Based upon an analysis of data of the 17 years since 1964, the unit yield decreases with the increase of rainfall during the period of May-Sep, with a correlation coefficient of $r = -0.5068$ ($N = 15$ $t = 2.277$ $P0.05 = 2.131$). In years of rainfall less than 700 mm during that period, the unit yield was always above 100 jin/mu. When the soil moisture content is contrary to the water needs of the cotton during its various growth and development stages, changes will occur to the plant as an adjustment to the adverse environment, and these changes will affect the ultimate yield. Irrigation and drainage measures must, therefore, be adopted to prevent such changes in the cotton plant. Studies on the rate of transpiration of cotton during various stages of growth and on the effects of irrigation and drainage measures on the yield are reported. Finally, indices and requirements for irrigation and drainage of the cotton fields are described.

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TITLE: "Relationship of Temperature and Developmental Phenomenon of Various Stages of Growth of Brown Leafhopper Feeding on Rice"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 5 Aug 81 pp 14-17

ABSTRACT: Since the large scale occurrence of brown leafhopper feeding on rice in 1968, many studies on the growth and development stages of this pest have been carried out. In 1976-79, the authors made a systematic observation under the condition of a range of temperature from 16 to 30°C. The relationship between the temperature and the early and peak stage of ovulation, between the temperature and the duration of ovulation, between the temperature and the duration of the nymph stage, between the temperature and the life span of the female, and between the temperature and the damage to field crops by the pest are analyzed. The optimal temperature for the growth of the pest during these stages is determined. A great temperature differential between day and night appears to be favorable for the nymph, but the range of the differential and its effect on the quantity of eggs laid by the female are still not clarified.

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TITLE: "Observation of Life Habits of Corn Borer in Cotton Field"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 5 Aug 81 pp 20-22

ABSTRACT: Although corn borer is the major pest of corn, its damage to cotton is increasingly severe in the region of Shanghai. In recent years to cause as much as 20 percent of yield reduction in some fields. In 1975-79, the author and colleagues carried out a preliminary study on the incidence and life habits of corn borers in cotton fields. Indoor breeding began at the peak of hatching of every generation of the pest in the field, to observe the duration of life phenomena of every generation. In the suburbs of Shanghai, it was observed, there occur 3-4 generations in a year. The first injures mainly spring corn and some early planted cotton. The second injures stems of cotton and some green bolls and female spike of corn. The third and fourth injure mainly green bolls of cotton. Mature larvae overwinter on corn and cotton stalks, in cotton warehouses, etc. Pupae begin to appear in early May next. Judging from the data of 11 years of moth-baiting with black light conducted at the center, emergence of the first generation is about 35 days, with 38 days for each subsequent generation. There is basically no overlapping between the first and second. From then on, the temperature rises, and the duration of each generation is shortened to about 30 days and overlapping occurs but not very serious. There is a relatively detailed description of life habits of the various generations.

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ORG: Trace Elements Group, Center of Soil and Fertilizer, Shanghai Municipal Academy of Agricultural Sciences

TITLE: "A Preliminary Discussion of the Prospect of Trace Element Application in Agriculture in Shanghai Suburbs"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 5 Aug 81 pp 23-24, 6

ABSTRACT: To date, it is known that plants and animals need such trace elements as boron, manganese, molybdenum, zinc, copper, iron, etc. and these needs cannot be substituted by nitrogen, phosphorus, and potassium. Following a brief review of the condition of research and application of trace elements here and abroad, the paper provides the Zn, B, Mo, Cu, Co, and Mn contents of Shanghai soils and data of a 1978-80 experiment to study the effects of applying B, Zn, Mn, and Mo fertilizers to several soils of Shanghai suburbs, respectively.

6248
CSO: 4009/17

AUTHOR: None

ORG: Xianning District Seed Company

TITLE: "Summarization of Quality Certification of Original Seeds of Guangluai No 4"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 8, Aug 81 pp 1-3

ABSTRACT: When a superior breed has been extended for large acreage production, factors such as the environment, machines, artificial mixing, natural hybridization, etc. will have their effects and degeneration will occur. It is therefore necessary to purify and invigorate continuously. Using the F_1 original seeds produced in the fields of the District Seed Farm as the control, seeds produced by 17 districts and county seed farms are examined over small areas of 0.02 mu each, and repeated 3 times. The experimental plots have good quality soil and even fertility and the management is of a relatively high level. Field observations and indoor examinations demonstrate that the average stalk height is 72.4 cm, the spike measures 17cm in length, each spike has a total of 66.7 grains, and the fruiting rate is 83.6 percent. The grain test weight is 25.25 g. Of these standards, the length of spike and number of grains per spike are slightly too low. The purity of the seeds of Tongshan County Seed Farm is lower, averaging 94.80 percent and those of Yangxin County 95.40 percent; both slightly lower than the original seed standard. Seeds of the remaining 15 farms are all rated at above 99.86 percent pure.

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TITLE: "Selective Breeding of 'Third Line' Inbred-Incompatible Strains of Cabbage-Type Rape"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 8, Aug 81 pp 8-13

ABSTRACT: Experimental data of various regions in China indicate that continuous directional inbred separation of hybrid offsprings of cabbage type and white type rape species is an effective way of quickly breeding out stable inbred incompatible line. This technique is faster and more effective than direct separation of ordinary breeds. Four experiments in the 3 years of 1978-80 carried out by the authors have demonstrated that the inbred incompatibility characteristic of the cabbage type rape can be stably and reliably maintained by using the corresponding inbred line of regular breed as the sterile-free line. The debudding procedure may thus be basically eliminated and hybrid rape may be more conveniently applied in production.

6248
CSO: 4009/16

AUTHOR: ZHOU Mingsheng [0719 7686 4141]

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TITLE: "Analysis of Long-range Weather Process of Summer Drought and Flood in the Hai River Basin"

SOURCE: Beijing QIXIANG XUEBAO [ACTA METEOROLOGICA SINICA] in Chinese No 3, Aug 81 pp 321-331

TEXT OF ENGLISH ABSTRACT: Based on the monthly 500 mb mean charts during 1951-1976, we have analyzed the characteristics of general circulation on summer drought and flood occasions in the Hai River Basin. There were obvious different characteristics between droughts and floods. Types of drought and flood may be summarized by the zonal index. These types and some indexes relating the long-range forecast of drought and flood are given.

It was verified that the types of drought and flood are feasible, and those indexes of the long-range forecast are useful through the inspection in 1977-1979.

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TITLE: "The Time-space Structure of the Relation between the 5-Day Mean Circulation at the 500-mb Level and the 5-Day Mean Surface Air Temperature"

SOURCEL Beijing QIXIANG XUEBAO [ACTA METEOROLOGICA SINICA] in Chinese No 3, Aug 81 pp 332-340

TEXT OF ENGLISH ABSTRACT: The time coefficients of the first 5 EOF's terms are obtained from analysis of the 5-day mean circulation at the 500-mb level over Asia for the period of 1964-1973. By using the cross-spectral analysis method, the features of the relation in the frequency region between the 5-day mean circulation at the 500-mb level and the 5-day mean surface air temperature in China are studied. In addition, the main frequency bands in which the coherence function is significant statistically are found. On this basis the paper goes further into the time-space structure showing these relations. The results may provide new fundamentals and a new method for researching long-range weather processes and forecasting the five-day mean surface air temperature with the circulation factors.

AUTHOR: WANG Futang [3769 7450 2768]

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TITLE: "On the Periodicity of Accumulated Temperature"

SOURCE: Beijing QIXIANG XUEBAO [ACTA METEOROLOGICA SINICA] in Chinese No 3, Aug 81 pp 341-348

TEXT OF ENGLISH ABSTRACT: Periodic fluctuation of agrometeorological thermal factors is investigated by using methods of spectrum analysis and periodogram. Analyses on the medium to short periods of active and accumulated daily mean temperature above 10°C and their duration in Shanghai, Qingdao and Tianjin show that period lengths of about seven to eight and two to three years are prominent, especially that of eight years. The periodic fluctuation of effective accumulated temperature is more stable.

AUTHOR: WANG Duo [3076 6995]

ORG: Anji Meteorological Station, Zhejiang Province

TITLE: "Long-range Weather Analyses of the Change of Food Yield over Tai Hu Plain"

SOURCE: Beijing QIXIANG XUEBAO [ACTA METEOROLOGICA SINICA] in Chinese No 3, Aug 81 pp 349-360

TEXT OF ENGLISH ABSTRACT: In this paper, the climatic background of high or low yields in the food production over the Tai Hu Plain is analyzed on the basis of yield and meteorological data of the period 1960-1979. Both relational types of the high yield/less rainfall years and low yield/more rainfall years are indicated. In addition, the 500 mb circulation patterns of both relational types are analyzed comparatively. The middle-high latitude area in North America-Greenland can be treated as a key area of circulation evolution. It is possible to show the difference of circulation patterns of high or low years using the west wind index of this area. Finally, the relationship between the food yield in the region and the yearly monsoon change over Eastern Asia is discussed.

9717
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JPRS 79287

23 October 1981

CHINA REPORT

AGRICULTURE

No. 169

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

Further Increase in Wheat, Early Rice Output Reported
(GUANGMING RIBAO, 2 Oct 81) 1

'JINGJI GUANLI' on Investigation in Henan Communes
(Ma Renping; JINGJI GUANLI, 15 Aug 81) 2

Briefs
Loess Highlands Afforestation 14

Anhui

Briefs
Prefecture Procurement 15

Fujian

Measures Adopted To Develop Sugar Cane Production
(FUJIAN RIBAO, 25 Aug 81) 16

Need for Improvement of Sugar Cane Production Emphasized
(He Xilan, Chen Xicong; FUJIAN RIBAO, 20 Aug 81) 18

Datian County Sows Grains To Compensate for Rice Loss
(FUJIAN RIBAO, 29 Jul 81) 23

Guangdong

Intensification of Efforts on Late Rice Crop in Huiysng Described
(Xie Fufang, Yin Hengde; NANFANG RIBAO, 9 Sep 81) 24

Hubei

Xiangyang, Jingzhou Prefectures Battle Drought
(HUBEI RIBAO, 18, 21 Aug 81) 26

Xiangyang Prefecture, by Jin Sheng
Nanzhang County, Xiangyang
Jingshan County, Jingzhou

All Time Record Potato Crop in Enshi Prefecture Reported
(Tian Yude, Huang Fasen; HUBEI RIBAO, 23 Aug 81) 30

Early Rice Output in Three Counties Reported
(Peng Binwu, et al.; HUBEI RIBAO, 28 Aug 81) 32

Electric Power Provided Throughout Xianning Prefecture
(Liu Jimin, Li Rongkui; HUBEI RIBAO, 17 Aug 81) 34

Jiangsu

Briefs
County Diversified Economy 36

Shandong

Bumper Cotton Harvest Shows Correctness of Party Line
(Wang Dianchen; DAZHONG RIBAO, 27 Aug 81) 37

Briefs
Prefecture Tobacco 40

Shanghai

Ways To Reduce Cold Damage to Late Rice Crop Charted
(Ding Changling, et al.; SHANGHAI NONGYE KEJI, 5 Aug 81) ... 41

Shanghai Meeting Calls for Strengthening Agriculture
(JIEFANG RIBAO, 27 Aug 81) 47

Shanxi

Development, Resources in Fishery Production Noted
(SHANXI RIBAO, 6 Aug 81) 49

Increased Yield
Untapped Resources

Brigade's Success in Handling Private Plots Described
(SHANXI RIBAO, 13 Aug 81) 51

High Income, by Li Pingshe, Li Suojiang
Promotion of Private Plots

Ways of Increasing Dryland Yields Discussed
(Zhang Jingyuan, et al.; SHANXI NONGYE KEXUE, Aug 81) .. 54

Characteristics of Two Types of Multi-Ear Corn Explained
(Zhan Qin, Zhao Yulian; SHANXI NONGYE KEXUE, 7 Jul 81) . 59

Scientific Research Produces New Water Conservancy Methods
(Lu Maochun; SHANXI RIBAO, 12 Aug 81) 61

Taiyuan Successfully Develops Sprinkler Irrigation System
(Liu Mengyan; SHANXI RIBAO, 12 Aug 81) 62

Taiyuan Area Has Bumper Harvest of Wheat
(Sha Zequan; SHANXI RIBAO, 12 Aug 81) 63

Scientific Cultivation of Wheat Provides Increased Yields
(Du Taishan; SHANXI RIBAO, 14 Aug 81) 64

Zhejiang

Notice Issued on Developing Diversification in Rural Areas
(ZHEJIANG RIBAO, 8 Aug 81) 65

All-Time Record Rice Yields Reported for Shaoxing City
(Pan Jialin; ZHEJIANG RIBAO, 24 Aug 81)..... 75

Briefs
Early Rice Procurement 77
Prefecture Rice Production 77

I. GENERAL INFORMATION

FURTHER INCREASE IN WHEAT, EARLY RICE OUTPUT REPORTED

Beijing GUANGMING RIBAO in Chinese 2 Oct 81 p 1

[Text] Although this year many areas in China have suffered from natural disasters, agricultural production for the country as a whole is still expected to achieve an all-round bumper harvest. It is predicted that grain production will approach that of the historical high year of 1979. Each economic crop will [also] have an all-round increase in output.

This year our country's wheat and early rice crops had a bumper harvest; these two crops' total increase in output was 10 billion jin and this is already in hand. At present, the autumn grain crop which accounts for two-thirds of the annual total grain output is coming along fine; a bumper harvest is expected. Harvesting has already begun on the autumn crops in the north. Except for a few places where damage was severe, many areas are reaping a bumper harvest. Intermediate rice, single crop late rice, corn and potatoes in the south, except for a few areas, are generally growing better than last year. Because the intermediate rice area was expanded by three million mu, the total output is expected to increase. The trend for late rice in the south is also toward an increase in output.

The production situation is better for cotton in our country this year. The cotton area is more than 75 million mu which is the highest in nearly 20 years for our country. Shandong which had an especially big bumper harvest has also expanded its cotton area this year. At present its cotton is growing well and it looks like a bumper harvest. Jiangsu Province, a major cotton producing area, has more than nine million mu of cotton this year and is expected to have a comparatively large increase in output. The cotton areas of Anhui, Hunan, Jiangxi and Xinjiang are also doing well.

The total output of autumn oil-bearing crops such as peanuts, sesame, linseed [huma] and sunflowers is predicted to reach last year's levels. Because the total output of this year's summer-harvested rapeseed increased more than 20 million dan over last year, a marked increase in the output for oil can be seen. This year enthusiasm for production was very high in the major sugar producing areas in both the north and the south. The planting area for sugarcane and sugarbeets increased more than one million mu over last year so that many areas will have an increase in production. From both the growing conditions and procurement, it can be seen that there will be a comparatively large increase in the total output of tobacco for this year.

CSO: 4007/32

'JINGJI GUANLI' ON INVESTIGATION IN HENAN COMMUNES

HK051410 Beijing JINGJI GUANLI in Chinese No 8, 15 Aug 81 pp 3-8

[Article by Ma Renping [7456 0117 1627] of the Kaifeng District Committee of the Henan Provincial CCP Committee: "New Questions That Have Emerged Since the Implementation of the Production Responsibility Systems in the Rural Areas"]

[Text] Since 1978, the production responsibility systems have been implemented in the rural areas of the Kaifeng District, Henan Province. They have corrected the "leftist" mistakes that lasted for many years. They have greatly aroused the initiative of the peasants and rapidly rehabilitated and developed agricultural production. They have lead to the overfulfillment of production plans and purchase quotas of grain, cotton and oil. In general, the income of the collective and the commune members has increased. The mental attitudes of the people and their relationships have taken on a new look. In order to learn about the new situation and new problems that have emerged in the rural areas since the implementation of the production responsibility systems, not long ago we carried out a systematic investigation for 2 months in Hugang Commune of Ji County, Guyang Commune of Lankao County and Zhusha Commune of Tongxu County, where production has gone up by large margins. Now I will summarize the general characteristics of several problems that we have found in the following:

I. The Problem of Surplus Labor Force

Due to the popular implementation of the production responsibility systems the initiative of the broad masses has been aroused. Hence, giving rise to the problem of surplus labor force. Detailed investigation in the three communes of Hugang, Guyang and Zhusha showed that surplus labor force amounted to 42.3 percent on the average. According to this percentage, there is a surplus labor force of 60,000 people in Kaifeng District, where the labor force totals 2.03 million people.

What are the causes of the surplus labor force? First, the number of people working has increased. In general, there was an increase of 50 percent in the production teams we visited. In some production teams, the increase was double the original number. Take Leizhai's No 8 production team of Guyang Commune as an example. Before the implementation of the production responsibility system, men over 60 and women over 50 stopped taking part in physical labor, and 17 to 18-year-old youths had not had their basic workpoints settled. There were 80 able-bodied persons in the whole production team, but the number of persons who took part in physical work was ordin-

arily only 50. Now that the "system of the five fixes and going all out" is being carried out, not only do retired persons but part-time laborers persons also participate in physical work. Now the number of persons who take part in physical work is over 90. Second, work efficiency has been raised. The masses said: "With rewards and penalities in mind, we go all out." Take Shuishi's No 6 production team as an example. In the past, 3 persons were needed to pull a cart to deliver manure to the fields. A cart was loaded with 3 baskets of manure, and they had to make 5 trips to deliver a cubic meter of manure. Now only 1 person is required to pull a cart, and he has to only make 3 trips to deliver a cubic meter of manure. Efficiency has been increased by 4 times. Before 1978, it took 40 days for Zhonglugang's No 3 production team of the Zhusha Commune to reap and thresh 400 mu of wheat. Last year it only took half a month. Efficiency was increased by 1.6 times. In the past, there was always a surplus labor force, but people failed to pay attention to it, because it was concealed by the egalitarianism of "mixing together" and by the organizational form of "everybody joining in" in physical labor. Now this problem has become prominent.

In view of the development of the labor force in the rural areas, it can be predicted that in the years to come, the number of able-bodied persons will continue to increase due to population growth. In addition, following the steady development of agricultural mechanization, we will require a smaller labor force. If we do not tackle the employment problem now, then the surplus labor force problem will become more accute.

According to our investigation in the communes and production teams we visited, there are two alternatives for the labor force in the rural areas: first is to carry out intensive farming, that is to carry out meticulous farming, raise unit yields and go all out production; second is to tap new sources, that is to develop a diversified economy, develop in an all-round way and go to the breadth of production.

In extensive farming, our cultivation is still haphazard. In order to raise the unit yields of grain and industrial crops we must build up the irrigation system, level the land, collect and make domestic fertilizer, improve the soil, carry out farmland capital construction in a planned way and enlarge the high and stable-yield farmland on which harvests can be guaranteed even during droughts and floods. In addition, we must carry out meticulous and scientific farming, such as developing good seed strains, raising cotton seedlings in earthen pots, intensifying plant protection, reforming the farming system and adopting intercropping and interplanting. All this can absorb some of the labor force. Generally speaking, it can take up to 20 percent of the surplus labor force. Many cadres at grassroot levels in the rural areas and communes members have the opinion that if we continue the "responsibility system of linking remuneration to output" for 5 years of longer, the masses will work confidently in applying fertilizer to raise soil fertility. This will be quite beneficial to intensive farming and to the development of production.

How should we tap the resources? The experience gained by some economically advanced production teams is as follows: we should unify the plans for developing agriculture in an all-round way (including building market towns in rural areas) with the plans for improving the standard of living of the peasants. We should also fully understand the relationships between industry, commerce, science and technology, culture and education, communications and transportation and the development of agriculture. We should tap the resources, and under the prerequisite of doing a good job in agriculture, promote the rural areas development of forestry, animal husbandry, fishery,

industry, commerce, construction, cultural, educational and health undertakings and social services and do whatever is possible, by utilizing the surplus labor force and various resources in the localities and by using every opportunity which comes along.

The three communes we investigated are situated in East Henan Plain, which is wide and can provide excellent conditions for a good deal of the labor force to develop farming and aquatic breeding. For instance, the Jianbaichanggang production brigade of Hugang Commune makes use of the 18 ponds (the area of water is over 100 mu) in and around the village for breeding fish, planting lotus roots and water chestnuts. Last year, 19,500 mandays were spent on lotus root planting, 13.7 percent of the total mandays the production brigade spent on all its farmwork. The income devided from this effort was over 99,000 yuan, about 55.7 percent of the total collective income of the whole production brigade. On the average, everyone received 78 yuan. These ponds represent only 6.7 percent of the total cultivated area of the whole production brigade. The Jiange production brigade of Zhusha Commune was a typical example in raising livestock. The number of large domestic animals was 125. On the average, each household had 1.2 animals. The number of live pigs was 430. On the average, each household had 4 pigs. The raising of livestock in this production brigade has provided work for 31 percent of the labor force.

The three communes we investigated are suitable for interplanting tung trees in their fields. This has provided conditions for the surplus labor force to undertake lumber processing. There are 1,400 mu of cultivated land in the Kongchang production birgade of Guyang Commune. It began to interplant tung trees in 1959. Now there are 6,000 tung trees in its fields and it has a lumber storage capacity of 1,200 cubic meters. The production brigade has set up 11 lumber processing factories. It uses 90 able-bodied persons in this endeavor, which account for 25.7 percent of the labor force of the entire production brigade.

An important road for tapping the resources for production, enlivening the economy in the rural areas and making arrangements for the surplus labor force is to develop commune and brigade-run enterprises and enterprises jointly run by commune members that utilized concentrated labor while relying on its own resources. Guyang Commune has set up 52 various enterprises, made arrangements for 1,234 able-bodied persons in the rural areas, which account for 7.4 percent of the total labor force in the entire commune. In the Songying production birgade of the same commune, 330 households of commune members have set up 20 brick-making kilns and 1 construction team. In the busy season, they are engaged in agricultural work. In the slack season, they carry out industrial work. These 2 items take up 61,000 mandays a year, which account for 16.4 percent of the total mandays of the production birgade. The Tungzhai production brigade of Zhusha Commune has assigned 36.1 percent of its labor force to take charge of the brick-making kilns and to refine oil, make flour, extract oil, gin cotton, purify salt and make beancurd and to carry out food processing.

Another important method for "digesting" the surplus labor force is to organize and encourage commune members to carry out proper family sideline production. There are 203 households in Qinzhai production brigade of Guyang Commune, 118 households are engaged in family knitwork. this takes 46,600 mandays a year, which account for 41 percent of the total mandays.

II. The Peasants' New Combined Economic Ventures

Since the implementation of the production responsibility system, an encouraging tendency has emerged, under which some peasants have begun to carry out combined economic ventures on a small scale for enlarging reproduction. They have combined to undertake nonstaple food processing business, mechanized farming, transportation business, brick-making, tile-making and construction business, handicraft, commerce, catering business and service business. Based on figures compiled from these three communes of Hugang, Guyang and Zhusha, the number of newly formed combined economic ventures total 332, and the number of households that take part in the combined undertaking amount to 1,770, 6.9 percent of the total number of households. There are 21 categories of combined undertakings: edible oil processing plants, 30, participating households, 132; mills, 52, participating households, 141; rice mill, 1, participating households, 4; flour mill, 1, participating households, 25; cotton ginning mills, 19, participating households, 62; cotton fluffing mills, 23, participating households, 72; feed grinding plants, 9, participating households, 24; hand tractor repair shops, 3, participating households, 15; earthen brick-making plants, 44, participating households, 138; brick-making kilns, 63, participating households, 507; construction teams, 23, participating households, 323; paper mills, 2, participating households, 19; hothouses, 8, participating households, 60; wooden furniture-makings plants, 20, participating households, 159; blacksmith's shops, 3, participating households, 8; knitwork centers, 4, participating households, 14; distributint shops, 19, participating households, 40; restaurants, 3, participating households, 11; food processing plants, 3, participating households, 11; sewing shop, 1, participating households, 4; and repair shop, 1, participating households. It was found that 206 economic combined undertaking were set up in places where the system of fixing output quotas for each household and of large-scale assignment of responsibilities for each household was being carried out, which account for 62 percent; 126 economic combined undertakings were set up in places where the responsibility system of linking remuneration to output was being carried out, which account for 38 percent.

There are two major organizational forms of combined undertakings. One is the combining of 3, 5 or 10-odd households of commune members. This form generally consists of small workshops, cotton fluffing and ginning undertakings and feed grinding undertakings which required small investments. It also consists of handicraft industry, processing undertakings, commerce and service business, which are carried out on a small scale. This form is widely used and accounts for 83.5 percent of the total number of combined ventures. The other is the combining of production brigades and several peasant households or production teams and several peasant households. This form mainly consists of paper manufacturing and wooden furniture-making, which require comparatively large investments. It also consists of brick-making kilns, which utilize collective land. At present, this form is not yet popular and only accounts for 16.5 percent of the total number of combined ventures.

The total fund of the combined ventures is 204,000. The various ways investment funds are devided as follows: one is that every combined undertaking has an equal share. The other is that every combined undertaking "invests what it has," that is, it invests property (including houses, equipment and land) if it has any, invests funds if it has some or contributes techniques if it possesses any. Of these two methods, the former is widely used in the combined ventures among commune members.

The latter is not so popular. It is mainly used in the combined ventures of the collective and the commune members, such as in brick-making kilns, in extracting oil, in milling wheat into flour and in breeding chickens.

These new combined economic ventures have been brought about by the implementation of the responsibility system. Concretely speaking, there are four conditions: 1) there has been a big increase in agricultural production, and the masses have surplus grain and money; 2) there is a surplus labor force and it is seeking new sources of production; 3) there is a need in the livelihood and production of the masses; and 4) the production team does not organize such production, especially in places where the system of fixing farm output quotas for each household and of large-scale assignment of responsibilities to each household is carried out, the items undertaken represent areas which are not suitable to be taken over by the collective, nor are they areas which up to now have been able to meet the needs of the masses. Individual commune members are too weak to undertake such production. Under such circumstances, new combined organizations have sprung up spontaneously like mushrooms.

The characteristics of the new combined economic ventures are as follows: First, they have not come out of political need, nor have they come as the result of administrative orders. The peasants have conscientiously combined themselves on a voluntary basis and under the principle of mutual benefits. This is the need of the development of production. Second, such combining is generally the combining of specialities, in which skillful craftmen are concentrated. This is beneficial to the gradual formation of the division of specialized labor and specialized production. Third, these combined ventures collect funds on their own, sell what they produce and are solely responsible for their own profits or losses. They elect their own responsible persons, work out rules and regulations, believe each other, work with one heart and are full of vitality. Fourth, these combined ventures are not formed on a large scale. Those who participate can work at the top or at the grassroots. In the busy season, they are engaged in agricultural work. In the slack season, they take part in industrial work. They have great flexibility. They observe carefully the demands of the market and can easily adapt to changes in the market. In addition, they have a "cheap" labor force, which has a natural competitive capability. Fifth, these combined ventures are closely connected with the interests of the participants, therefore, they take an active part in and care for their work. They carry out meticulous calculation and increase production and economize. They have achieved very good economic results. Last year, 18 households of commune members in Fulizhuang production brigade of Hugang Commune ran a brick-making kiln. After 7 months' work, they made a profit of 4,000 yuan. Each household received 220 yuan on the average. There is another example. Last November, 33 households of commune members separately ran 3 edible oil processing plants, 3 miles and 1 cotton fluffing plant. Up to March this year, they made a profit of 5,050 yuan. Each household received 133 yuan on the average. According to the above characteristics, we are of the opinion that such combined economic ventures are not a simple duplication of collectivization that took place during cooperative movement or communization and that it is a new thing which is full of vitality. It has proved that since the implementation of the system of linking remuneration to output, of assigning production responsibilities to each household and of large-scale assignment of production tasks to each household, the peasants have not become less interested in taking the socialist road, on the contrary, they have become more interested. It has shown that these places will gradually take the road of enlarging the types of combination through

small-scale cooperation which will be carried out on a voluntary basis and under the principle of mutual benefits. This is the general trend.

Practice in the past several months has proved that although there is some blindness in the new combined economic ventures formed by the peasants, its social effects are very good. It has made up for the shortcomings of the enterprises run by the state, communes and brigades. And it has made things convenient for the people. In the past, the peasants had to go to the market town and wait in a long queue to have their wheat milled into flour, oil extracted, cotton ginned and fluffed. Now those who have formed combined undertakings do not have to take the trouble of going out of the village to get all of this done. In the past, when building a 3-room house, the house owner had to spend more than 300 yuan on the laborers who had come to help build the house at his request by providing them with medals, drinks and cigarettes. The houseowner had spent a lot of money, but the laborers did not receive it. Neither of them liked it. Now the commune members jointly run construction teams, which are responsible for building houses. The cost for building a 3-room house is only 150 yuan. The houseowner does not have to be responsible for the laborers' meals and cigarettes, and it only takes 2 days to build a house. The masses are quite pleased with having such a combined undertaking.

But there are a lot of problems in the understanding, attitudes and policies of cadres at various levels towards these combined undertakings. The outstanding ones are as follows: most of the leading comrades are not sensitive towards this effort. They do not understand, investigate, study or know about the combined ventures of the peasants in their localities. There was a leading comrade of a commune who said that there was no combined undertaking in his locality. After investigation, we found that there were more than 170 combined ventures in his locality and that 900 households took part in these undertakings. What is even worse is that some brigades' cadres do not know how many combined ventures there are in the localities under their leadership. Although some leading comrades know about the situation, they are not clear about the nature of the combined ventures. They are neither opposed to nor in support of these endeavors. Some individual cadres are deeply affected by "leftist" ideas, they think that such undertakings are illegal and must not be approved. This attitude is the worse because the distribution, pricing, supply of raw materials and the marketing of products of the combined ventures are not looked after by the cadres.

In order to correctly lead the commune members in running well the combined ventures, we think that we must first be clear about the nature of the organization of combined ventures. Lenin pointed out: "From capitalism mankind can transit only directly into socialism, that is into the public ownership of the means of production and into the principle of to each according to his work." That is to say, there are mainly two signs under the socialist system, which are most fundamental: one is public ownership, the other is to each according to his work. The new combined economic ventures basically meet these to two conditions. First, let us have a look at the ownership. The machinery, tools and plants of the combined ventures are owned by several households of commune members or by several commune members and the collective (the production brigade or the production team). Second, let us look at the allocation. There are mainly three kinds of allocation: the first kind is based on the number of shares being held, that is the daily operating costs are based on the number of mandays, while the investment is divided according to the

number of households. Hence, the divvying of bonuses on the basis of the number of shares being held or according to the number of households. The second kind is the combining of the principle of to each according to his work and the principle of divvying bonuses according to the money paid for the shares. Take the Songying production brigade of Guyang Commune as an example. The commune members adopted the method of allocating by two installments in running brick-making jointly. The first installment is the payment for the work done in the process of making earthen bricks, loading kilns with bricks, baking bricks in kilns, drawing fire out of the kilns and dismantling kilns to get bricks out. Payment is based on the number of bricks completed and the laborers receive pay according to how much work they have done. The second installment is the allocation of last net profits according to the number of shares being held. The third kind is allocation based on the principle of to each according to his work. This method is also divided into two kinds: the first one is linking remuneration to the length of the time to complete the work and bonuses are decided according to the number of days to complete the work. The other one is linking remuneration to the number of bricks completed and payment is issued according to the products finished by each person. Therefore, we think that the new combined economic ventures are a small collective economy in the big collective economy of the production team and is of the socialist nature. We should accept their legal status, encourage and support them and intensify the leadership over them. They may be administered by the commune, the production brigade and the production team. Organizationally, they may be managed by the departments of commune- and brigade-run enterprises. Their orientation and distribution may be affected by economic means such as pricing, taxation, credit, providing funds, supplying raw materials and marketing the products.

At present, most of the combined ventures have no connections with the communes or the production brigades. It is necessary to gradually solve this problem. In this respect, some production teams have adopted the following methods: these new combined ventures are placed under the unified leadership and management of the production brigade or the production team. For instance, the commune members of Leizhai production brigade of Guyang Commune jointly run brick-making kilns. The production team provides the land, water and the peels for the kilns in the brigade. The production team gets 10 yuan for every 10,000 bricks produced. Xiguan and Kongyan production brigades let the combined ventures use the brigades' communications channels. These two brigades also issue letters of introduction to promote the work of combined ventures which pay a management fee to the brigades. In Zhongligang production brigade of Zhusha Commune, there is a cadre who is responsible for arranging work for the construction teams jointly run by the commune members. He also collects construction costs on behalf of the construction teams. The production brigade charges a 5 percent management fee. Zhaizhai's 5th production team of Hugang Commune has provided a loan to the edible oil processing plant jointly run by eight households to help solve its problems. Every day each household pays 10 fen to the production team for common accumulation. We think this method is acceptable.

III. The Problem of the "Five Difficulties" in Supply and Marketing Service in Rural Areas and the Problem of Building Market Towns

Following the favorable turn in the economic situation in the rural areas and the increase in the income of commune members, the peasants have placed higher and higher demands on production and livelihood. From the investigation in the three communes

of Hugang, Guyang and Zhusha, we have learned that the contradictions between supply and demand in the means of production, consumption, repair services, cultural and recreation activities are becoming more and more prominent. Along these contradictions, the "five difficulties" are strongly felt by the broad masses of peasants.

1. Difficulties in selling products. Due to the agricultural harvest, the products which will be sold by the peasants have doubled. The investigation in the three communes mentioned above showed that in 1978 the communes purchased from the peasants 3.387 million jin of grain and 289,000 jin of edible oil. In 1980, they purchased from the peasants 10.155 million jin of grain--an increase of 160 percent--and 535,000 jin of edible oil--an increase of 85 percent. But it did not meet the demands of the masses. Take Hugang Commune as an example. Because there are not enough granaries, the purchase of grain at negotiated prices has been stopped since January this year. So the average bargained price of grain on the market in March was lower than the state's purchased price, with the exception of the price of wheat. The problems in purchasing, storing and transporting cotton in this commune are also very prominent. In 1978, the commune purchased from the peasants 160,000 jin of cotton. In 1980, it was 1.3 million jin, which was a 690 percent increase. But there is no packing equipment in this commune, and the storehouses can hold only 120,000 jin of cotton. Cotton is transported out in loose packing and 1 truck can be loaded only with 2,000 jin. It is difficult for the masses to sell cotton. There are also difficulties in storing and transporting cotton. During the high tide of purchasing, some commune members have to sleep at the door of the purchase center and wait for 2 days to sell out their cotton to the purchase center.

2. Difficulties in buying good chemical fertilizer and medium and high-grade commodities. The demands of the masses on the means of production have increased. They especially like to use urea, ammonium nitrate and ammonium sulphate. But these chemical fertilizers have fallen short of supply. When the peasants know some good chemical fertilizer has arrived, they voluntarily help unload and rush to buy. More and more peasants need bicycles, sewing machines, wristwatches, radios and television sets. Besides these "five valuable articles," the most favorite things of the peasants are polyester knits, good quality chemical fiber materials, blended acrylic and wool knits and good quality men and women's ready-made clothes. But these commodities are in serious short supplies and it is difficult for the people to buy them.

3. Difficulties in getting a haircut, taking a bath and repairing household electric appliances. The repair and servicing of radios, television sets, sewing machines, clocks and wristwatches and bicycles have been the weakpoints of the three market towns. For instance, in the market town of Zhusha, there is only one barber. In the market town of Hugang, not only barber and repair undertakings cannot meet the demands of the people, even soy sauce and vinegar are not available. People have to go to the county seat to buy soy sauce and vinegar.

4. Difficulties in traveling by bus, in transportation and in electricity supply. With the exception of Guyang, communications in the other two communes are very inconvenient. The two communes are respectively 6 to 7.5 kilometers away from the asphalt highway. The roads from the communes to this highway are very bad. Transporting agricultural products out of the villages or of industrial products into the villages is affected by the weather. There are no public buses going between the town and the villages. There is electricity in the three communes, but it is in

great demand. Usually electricity is supplied every other day. There is no electricity in most of the production teams. Because the supply of electricity is short and sporatic, the development of commune and brigade-run enterprises is restricted, and the cultural activities of commune members is affected.

5. Difficulties in having recreational activities. Recreational activities in the three market towns are very limited. The opera troupes above the county level seldom go to the villages to put up performances. There are film projection teams in the three communes, but most of the projectors are small projectors, they are short of 35mm projectors. Open-air theaters are very seldom used. Films are shown through small film projectors once a month on the average. The theater built by the production brigade have no films to hire. This is what the people say: "We do not worry about food and clothing, the trouble is that it is very inconvenient to see an opera or a film." In addition, there is no special XINHUA bookstore in the three market towns. All books are sold by the supply and marketing cooperative on behalf of the XINHUA bookstore. Books, magazines and pictures needed by the rural areas cannot reach the rural areas. There are very few reading rooms in the market towns. The broad masses of the peasants have no books to read.

To change the situation of the "five difficulties," we think that the state should intensify the building of market towns in the rural areas, besides producing more and better consumer goods.

The market towns in the rural areas are the places where agricultural products are concentrated and sold, the pivots for exhanging commodities between the towns and the countryside and the centers for processing agricultural sideline products. To run well a market town, we should handle well commerce and handicraft industry, open circulation channels for commerce and promote the exchange of goods between the towns and the countryside. We should run well catering businesses, ready-made clothing stores, barber shops, public bathhouses, photo studios, repair and service undertakings. We should make the material life of the peasants conveninet, run well middle and primary schools, hospitals, theaters, libraries, reading rooms and agricultural scientific research centers. We should enhance the cultural and educational level in the rural areas and popularize science and technology.

Developing market towns in the rural areas is beneficial not only to the rational arrangement of the building of politics, the economy and culture, but to opening a broad road for employment and labor for the people in towns and the countryside. Following the development of market towns in the rural areas, more surplus labor force is sure to be "digested" in places where the surplus labor force is available. The flow of agricultural population into big cities is in essence the reflection of the difference between the cities and the countryside. If market towns in the rural areas are run well, we do not think that the broad masses of the peasants will leave their villages for big cities. This will be beneficial to gradually changing the situation in which China's industry is excessively concentrated in big cities, to improving the arrangement of economic construction and to controlling the scale of big cities. Therefore, from a long-term point of view, building market towns in the rural areas is a historical task which has strategic significance.

But the building of market towns in the rural areas has long been ignored. Up to present, practically no one was concerned with this problem. This must be changed.

On how to build market towns, we suggest the following three points:

First, we should carry out thorough investigation and study, and in accordance with the local conditions of geography and resources, their development history and original foundation, work out a plan which is feasible and reliable. The plans for developing market towns must reflect their own characteristics and adhere to the principle of serving the rural areas, promote improving the economy in the rural areas and serving the production and livelihood of the peasants. We should rationally arrange various construction projects so as to coordinate the relations between housing, public facilities and production and construction. We must economize on the use of the land, pay attention to protecting the environment, and gradually build market towns in the rural areas into places where the broad masses of peasants can have a prosperous, economy, a developed culture, a beautiful environment and a comfortable life.

Second, the construction of market towns in the rural areas must be based mainly on the collectives' economic strength. In these market towns, we should do our best to run industry, commerce, handicraft industry, catering business, service undertakings, repair undertakings and cultural and recreational undertakings which are of the collective nature. We should organize the youths who are awaiting employment and organize the idle and scattered labor force to run cooperative shops, restaurants, public bathhouses, labor shops, hotels, inns with sheds for carts and animals, photo studios, teahouses and reading centers and serve as commissioned agents. We should also allow and encourage various individual undertakings, conscientiously absorb private investments and energetically develop trade in market places.

Third, the tasks for building market towns in the rural areas are very arduous and involve a wide range of problems. The departments of agriculture, industry, culture and education, health, planning, materials and finance should all be concerned with the building and development of market towns in the rural areas and actively support them within the limits of their administration. Especially the leading bodies at the county level should put the building of market towns in the rural areas on their agenda.

IV. The Problem of Building New Houses in the Rural Areas

Following the development of the economic situation in the rural areas, a flourishing scene in which many new houses have been built in the rural areas has emerged for the first time since the founding of the People's Republic of China. According to the statistics compiled in the 3 communes of Hugang, Guyang and Zhusha, in Zhusha's 25,412 peasant households, in the past 2 years, 3,858 households have built new houses, and 598 households have got their building materials ready. These 2 items account for 18 percent of the total number of peasant households. A total of 12,240 houses have been built in the three communes and materials for building 1,496 houses have been obtained. These 2 items account for 66.7 percent of the total number of the new houses which have been built in the last 30 years.

Building new houses in the rural areas is a good thing. It has an important significance to improving the living conditions of the commune members, beautifying the environment, bringing the production initiative of the peasants into play and narrowing the difference between the cities and the countryside. But it has also brought new problems to the work in the rural areas. At present, the most out-

standing problem is the base land for housing. Because the policy on the base land was not propagated sufficiently in some places, some people misunderstood that "since the responsibilities for cultivating the land are assigned to each household, the base land for housing should also be returned to the original owner." Some individual commune members took out their land certificates or even land deeds kept since the years of emperor Xian Fung of the Qing Dynasty and asked the production brigade to return their base land for housing. They even obstructed the commune, production brigade and production team in their work to allocate and use undeveloped land for housing. The management over collective cultivated land in some places is not strict. Some people build houses on the collective cultivated land and enlarge the base land for housing in disregard of the party's policies and rules, disobeying the unified arrangement by the commune and the brigade. We are already confronted with the problem of too many peasants having a limited area of cultivated land. Following the growth of population, the contradictions between the limited area of cultivated land and the increasing number of peasants will become more and more acute. If we lose control over the use of land, it will not only affect the development of the peasants' production and the improvement of the people's standard of living, but also bring about disastrous results which cannot be made up for and leave a legacy of trouble to our descendants. Therefore, we must not lower our guard towards the problem of occupying the land at will. We must educate the cadres and commune members to correctly handle the relations between the individuals and the collective and the relations between short-term interests and long-term interests, to take the situation as a whole into consideration, to protect the collective interests and the cultivated land and to economize on the use of land. We must not allow anyone to occupy the cultivated land or the undeveloped land for housing. In fact, the base land needed for building houses is not insufficient but is in disorder if compared to the vacant developed land. To change the chaotic situation in which houses are built at will, Guyang Commune, basing itself on a careful investigation and study, has once again worked out a method of managing and using the base land for housing, strictly stipulated the procedures for approval and sternly dealt with the problem of forcibly occupying the base land for housing and the cultivated land. Excellent results have been achieved.

Another problem in building houses is how to carry out planning in line with local conditions. At present, housing building in the rural areas lacks overall planning. It has no arrangement, no uniform housing plan. Houses are built at sixes and sevens. There are no walkways in the villages and no spacing between houses. This has not only wasted a great deal of land, but brought a lot of difficulties to the production and livelihood of the commune members. Now houses are being rapidly built in rural areas. If we do not make the best use of the situation, act rapidly, make planning in advance, and let the above situation develop unchecked, serious results will be brought to bear on the overall arrangement of the new countryside in future. Therefore, every commune and production brigade should have an overall plan and comprehensive arrangements according to the scale of the village, the characteristics of the terrain and the development of production. In addition, depending on the structures of older houses, we should fully utilize the original buildings fro gradual reconstruction to prevent the pulling down and building up on a large scale. Attention is beginning to be focused on this question in Guyang Commune. A few villages are beginning to take on a new look. This is being well received by the masses.

We must pay attention to the structure of houses to be built. The structure of the houses is generally outmoded. Ventilation and lighting are bad. The feudal flavor of "various kinds of monsters" is heavy. The houses require much labor and a lot of materials and funds. This must be changed. After we had talks with the masses, we knew that they were quite willing to carry out a change. Under unified planning and rational arrangement, the design departments should absorb the experience from folk techniques in construction, respect the reasonable habits of the peasants and design houses of the countyard style with the village flavor and local characteristics.

In addition, building materials are also a big problem. The commune, the production brigade and the commune members should stand on their own feet. Besides, the departments concerned should have a plan to carry out the production of building materials and to do a good job in supplying materials. What is more, we should encourage the gradual use of concrete and reinforced concrete to replace bricks and wooden building materials so as to solve the actual difficulties of the masses in building houses.

CSO: 4007/21

BRIEFS

LOESS HIGHLANDS AFFORESTATION—Yinchuan, 4 Oct (XINHUA)--People in 132 counties on the Loess Highlands of China planted more than one million hectares of trees between 1978 and 1980, according to a recent meeting of afforestation on Loess Highlands held in Shaanxi Province. The highlands, along the middle reaches of the Yellow River, experience a phenomenal loss of topsoil every year into the river, China's second largest and the most silt-laden in the world. Rain washes 1,600 million tons of silt into the river every year and 70 to 80 percent of it comes from this area. The trees planted in the 3-year period are equal to 80 percent of the total hectarage planted between 1949 and 1977. The 132 counties are in Shaanxi, Gansu, Qinghai and Shanxi Provinces and the Ningxia and Inner Mongolia autonomous regions. Historically, the area was covered with dense forests, but over time the vegetation has been reduced to only 5 percent of the area. After the founding of the People's Republic in 1949, afforestation studies were carried out and, by 1977, more than 1.6 million hectares of trees had been planted on 17 percent of the denuded land. The most recent efforts have been along mountains and gullies and involve shrubs, grass, and various types of trees. The method has been tried and proved in the same counties in the last few years, and is now speeded by the use of airplanes to sow wide areas. [Text] [Beijing XINHUA in English 0809 GMT 4 Oct 81]

CSO: 4020/11

BRIEFS

PREFECTURE PROCUREMENT--Commune members in Chuxian Prefecture, Anhui, have overfulfilled this year's grain and oil-bearing crops procurement tasks. As of 30 September, the prefecture had procured more than 550 million jin of grain, or 105.9 percent of target; 22.75 million jin of peanuts, an increase of 19.16 million jin over the same period of last year; 1.1 million jin of sesame, or 860,000 jin more than the same period of last year; and 52.28 million jin of rapeseed and other oil-bearing crops, as compared to the target of 20 million jin. The prefecture's total grain output may reach more than 3.6 billion jin this year, an increase of about 12 percent over the last year; and total output of oil-bearing crops may exceed 280 million jin, an increase of more than 85 percent over the last year. [OW061039 Hefei Anhui Provincial Service in Mandarin 1100 GMT 5 Oct 81]

CSO: 4007/33

MEASURES ADOPTED TO DEVELOP SUGAR CANE PRODUCTION

Fuzhou FUJIAN RIBAO in Chinese 25 Aug 81 p 1

[Article: "Provincial Government Holds Meeting With Responsible Comrades of Concerned Departments for Study and They Decide To Take Six Measures To Develop Sugar Cane Production"]

[Text] The provincial government recently held a meeting with the responsible comrades of concerned departments to study the problem of sugar cane production in our province, and they decided to take the following measures to hasten the development of sugar cane production.

1. The question of the planning and distribution of sugar cane production. The meeting agreed that in view of the actual situation, the scale of construction of sugar refineries and the distribution of the refineries must be appropriately readjusted. To adapt to the development of sugar cane production in our province, the pressing capability of the newly built sugar refineries must have a leeway of 10 percent in the design. At present, when the amount of cane is greater than the pressing ability, the method of "walking on two legs" can be used. One way is to expand and build new and large sugar refineries according to plan, and to hasten the construction of sugar refineries now being built so that they can start production in phases. The second way is to allow the establishment of some small pressing shops, indigenous sugar mills in remote and border regions. The related localities and cities must quickly propose plans for such establishment and submit the plans to the provincial planning committee for review and approval so that the projects, capital, equipment, materials and power can be arranged early in order to adapt to the needs of the pressing season this year and to strive toward basically changing the passive deficient capabilities of pressing beginning next year.

2. The question of subsidies for late cutting beyond the sugar cane season. In order not to miss farming time, in order to assure production by the sugar refineries and reduce loss, the sugar refineries' pressing period should be 120 days. The cutting of sugar cane should be arranged so that it does not go beyond 5 April. If the responsibility for going beyond this time lies with the refinery, the refinery should subsidize the farmers for delayed cutting. The criteria for subsidies should be based on the amount of procurement of late cuttings. From 6 April, 1 percent of the procurmenet price is to be added each day. From 21 April, 5 percent of the price is to be added a day (i.e., 1 percent on 6 April, 2 percent on 7 April, 15 percent on 20 April, 20 percent on 21 April). To make the economic responsibility clear, the refinery and the commune brigades should sign procurement contracts.

3. The question of the amount of sugar kept for the locality, the county and the refinery. To facilitate the mobilization of the enthusiasm of the development of cane sugar production by the sugar cane regions, counties and sugar refineries, and to assure that the state's plans for the procurement and the transfer and shipment of edible sugar are completed, the meeting agreed to allow each region as a unit to keep 5 percent of the procured amount. The county and the refinery keep a percentage; the percentage to be kept by each locality, city county and refinery is arranged by the locality's administrative office according to the local situation.

4. The question of the transportation of sugar cane. To strengthen management and reduce losses and increase the income of sugar cane farmers, the cutting and shipping plans of sugar cane must be completed on time. Transportation of sugar cane should mainly be the responsibility of the communes and brigades, while transportation by the sugar refinery itself and by the shipping departments is secondary. But related counties (cities), commune brigades and plants must acquire their own transportation capability as early as possible. They should apply to the transportation department for a shipping plan for the amount they cannot transport by themselves and the transportation departments should support them in a big way. The fuel used by the communes, brigades and plants for transporting sugar cane by themselves should be uniformly arranged by the provincial planning committee and included in the fuel supply plan.

5. The question of payment for sugar cane. The meeting agreed in principle to combine transfer of funds and cash payment in accounting for sugar cane and for payment for sugar cane. The sugar cane submitted by the collective for sale to higher authorities is paid by transfer of funds (when necessary, a portion can be paid for in cash), and cash is paid for sugar cane produced on private plots by individuals. In the transfer of funds, besides sugar cane loans, the bank should guarantee payment.

6. The question of the management system of the sugar manufacturing industry. To enable our province's present sugar manufacturing company to gradually change its administrative nature to that of a fulll company, joint operations can first be developed without changing the subordinate relationship, the ownership system and the financial management system.

9296
CSO: 4007/588

NEED FOR IMPROVEMENT OF SUGAR CANE PRODUCTION EMPHASIZED

Fuzhou FUJIAN RIBAO in Chinese 20 Aug 81 pp 1, 4

[Article by reporters He Xilan [0149 1585 5663] and Chen Xicong [7115 6932 5115]: "Sugar Cane Production Needs To Be Improved Urgently"]

[Text] In recent years, our province has implemented economic measures to link up sugar cane production. Sugar cane and the production of cane sugar have grown rapidly. From 1980 to the pressing season of 1981, the entire province produced over 3.55 million tons of sugar cane; except for sugar cane seedlings and damaged plants, the amount pressed was 3.2 million tons, producing over 385,000 tons of sugar--all breaking the highest records in history. According to the understanding of the concerned departments of our province and the surveys conducted in the countryside, several problems exist in this pressing season and in production which urgently need improvement. Improvements will be beneficial to mobilizing the enthusiasm of the sugar cane farmers in production and they will also better assure the continued increase in cane sugar production.

I. The Question of Rationally Grasping the Pressing Period

Sugar cane contains the highest amount of sugar from January to March, and this period is the ideal pressing period. During the 1980 to 1981 season in our province, the pressing period stipulated by the state and the requirements of the agricultural production season in our province were passed, the pressing period of many sugar refineries was delayed until after 5 April, to the last 10 days of April. Individual refineries completed the task as late as the beginning of May.

Extending the pressing period causes loss to the state and the farmers. Some of the sugar cane that was cut and pressed late produced less sugar, the farming time was delayed, and the growth of the perennial roots of sugar cane of the aftercrop and companion planting of soybeans and such crops were affected. According to estimates by some sugar cane experts, by cutting sugar cane after "5 April", the yield of the perennial sugar cane left in the fields to grow will be decreased by about 20 percent. At the same time, when the shipping and pressing time of cut sugar cane is delayed too long, the sugar cane changes texture, the sugar content converts and these changes affect the sugar yielding percentage. For over 10 years, fixed locality sampling tests at the Zhangzhou sugar refinery of the Dengke Brigade of Buwen Commune showed that sugar cane begins to overly ripen from the last 10 days of March or the first 10 days of April. The sugar content drops by 0.2 to 0.4 percent every 10 days. The Longxi Regional Sugar Manufacturing Company calculated that

during this pressing season, the pressing period of 165,000 tons of raw sugar cane throughout the region went beyond "5 April", or 16.8 percent of the total amount of sugar cane.

There are many causes that delay the pressing time of sugar cane. The main cause is that during the past few years, our province's sugar cane production has developed very quickly and the construction of the presently existing sugar refineries has not been able to catch up. The whole province now has 48 sugar refineries, with a daily pressing capacity of 29,500 tons; there are only 4 large sugar refineries that can press more than 2,000 tons a day. The pressing capability was insufficient originally. With the addition of the irrational distribution of sugar refineries and the irrational distribution of sugar cane plantations in some localities, the conflict between the development of sugar cane production and the pressing capability for cane sugar is exacerbated. At present, the way to solve this problem in general is to fully utilize the facilities and capabilities of presently available large and small sugar refineries and to rationally readjust them. Some of the methods implemented at some localities are unsuitable. They are mainly the following: 1) Some localities do not start out from the actual situation; they unilaterally implemented the guidelines of "small refineries letting the large refineries have enough" and "assuring white and assuring large". For example, if Zhangzhou sugar refinery has only 320,000 tons of sugar cane, then with effort, this amount can be completely pressed before "5 April". But the managing departments started out only from producing more sugar. During this pressing period, the Changtai and Chengguan sugar refineries were shut down, so the sugar cane was shipped to the Zhangzhou sugar refinery for pressing; more pressure was placed on the Zhangzhou sugar refinery so it had to delay the sugar cane produced by the nearby Buwen Commune and others to after "5 April" (it is understood that after 5 April, the Buwen Commune still had over 14,000 tons of sugar cane uncut and unpressed). The farming season was missed, and it was estimated that the Buwen Commune suffered a loss of more than 200,000 yuan. Each sugar cane farm family received an average of over 17 yuan less. Of course, when the sugar cane raw materials are deficient, implementing the guidelines "small refineries letting the large refineries have enough", "assuring white and assuring large" and "high sugar and high pressing" is correct, especially if "high sugar and high pressing" can be done well; the sugar refineries will benefit, the state will benefit, and the commune brigade collective and the farmers will benefit. But a look at the pressing capability and the shipping capability of some local refineries shows they may not have such capabilities.

2) Some departments do not take the benefits of the state and the farmers into overall consideration. Various limitations which should not be imposed have been imposed in cane sugar production in certain sectors, hindering necessary readjustment. In our province, arranging the supply of sugar cane raw material according to administrative zones in some localities is irrational. This causes some refineries "not to have enough " while some "are bursting from too much". Returning profits and transferring some sugar cane to sugar refineries that have a surplus pressing capability is beneficial to the sugar refineries, the sugar cane farmer and the state. But some departments have not paid attention to solving these problems.

To solve the problem of delaying the pressing period and to assure that the pressing task can be completed in time, many comrades have suggested the following: 1) The production of sugar refineries should be rationally arranged according to

the farming period and the estimated yield of raw sugar cane, and the processing capability and the amount of raw sugar cane should be balanced. The sugar refineries should consider the farming season when arranging production and they should care about the benefits to the farmers. It should be firmly established that the pressing period of the sugar plant should not surpass 120 days (i.e., starting from the beginning of December of each year to "5 April" of the next year). For each day after "5 April" the refineries should give a specific compensation to the farmers. At the same time, the contract system should be strengthened. The industrial department should be responsible for delaying the pressing time caused by the industrial department, the commune brigade should be responsible for delays caused by the commune brigade. 2) Second, the potential should be explored; the capabilities of the equipment of presently existing sugar refineries should be fully developed; the simultaneous operation of large, medium and small refineries should be implemented; and there should not be unilateral emphasis on "assuring white and assuring big", shutting down small sugar refineries. We must hasten the rebuilding and expansion of presently available sugar plants, increase the pressing capability, and turn the passive situation of sugar refineries which cannot adapt to the development of sugar cane production because of deficient capabilities around. We must simultaneously operate state refineries and commune and brigade refineries and develop the enthusiasm of the communes and brigades to operate small refineries. Indigenous commune and brigade sugar refineries should not be developed in sugar cane regions that already have a sugar refinery. The distribution of building sugar refineries and planting sugar cane should be rational. We cannot build sugar refineries far away from the sugar cane region, or plant sugar cane far away from the sugar refineries. According to regulations, it is best to locate the sugar refineries within a range of 20 kilometers from the sugar cane regions in order to reduce the difficulty of long distance shipping. In the present and future development of cane sugar production, small sugar mills still serve a definite function. Also, brown sugar is needed in the life of the masses of the cities and the villages, there is a broad market, and it should be appropriately developed. We must support the communes and brigades in border regions or where there are no sugar refineries to establish some small sugar mills to produce brown sugar as a supplement to large sugar refineries. 3) The method of returning profits should be advocated to encourage refineries with a surplus pressing capability to fully develop the rate of utilization of the equipment and to sign contracts with sugar cane regions with insufficient pressing capability to solve the problem of extending the time of pressing.

II. Difficulties in Selling and Shipping Sugar Cane by the Farmers

The yield of sugar cane in our province is increasing year after year. Some sugar refineries have increased the amount pressed, and the amount to be shipped is large, exacerbating the original conflict of a deficient shipping capability. It is difficult for the farmers to sell and ship sugar cane, and the situation of "more sugar cane is hurting the farmers" has emerged. Most of the procurement personnel of the sugar refineries and many drivers do a good job of procuring and shipping sugar cane. Some drivers have also thought about the farmers and have actively shipped sugar cane with tireless efforts. But a few procurement personnel and some drivers have bad habits. According to the survey conducted by the provincial department of light industry, in some localities, a sugar cane cutting job sheet can be sold for 5 yuan, while the highest reached 16 yuan, and shipping a truckload of sugar cane includes a free meal for the driver and monetary and material gifts. Such incidents have

happened in Zhangzhou, Longhai, Yunxiao, Putian, Xianyou, causing strong resentment by the sugar cane farmers. The provincial government and Longxi Prefecture pointed out in a survey report on economic policy in the farm villages: Regarding the question of sugar cane, only the industrial production side is taken care of, pressing of sugar cane is overly concentrated, and with the addition of the above misconduct, farmers have encountered many difficulties.

The difficulty in selling and shipping sugar cane by the farmers can be actively solved by the joint efforts of concerned departments. The communes and brigades that have shipping capabilities should arrange for shipping by themselves. The sugar refineries can procure sugar cane by setting up procurement stations in communes to facilitate the masses in submitting and selling sugar cane. Communes and brigades that are close to the sugar refineries can arrange for contract shipment. The amount of fuel used for transporting sugar cane can be supplied by the sugar refinery or concerned units according to a quota based on mileage. Procurement stations at small railroads must also appropriately arrange for shipping after cutting and pulling. The sugar refineries and transportation departments must strengthen the ideological education and disciplinary education of procurement personnel and drivers, they must be strictly managed, and supervision by the masses should be practiced. Those who seriously extort and blackmail farmers should be strictly dealt with. Before cutting and harvesting sugar cane, the sugar refinery must sign a contract with the production team to arrange the order of cutting, shipping, harvesting and pressing to assure that the sugar cane is cut and harvested in time according to the required amount, the required quality and according to plan. The sugar refinery has the right to refuse to accept sugar cane cut and harvested in violation of plans, and the sugar refinery should be responsible for economic compensation for the amount of sugar cane which could not be procured according to plan.

III. The Question of the Continued Implementation of the Economic Policy

Our province has implemented the economic policy of linking sugar cane and food grain production and sugar cane and green manure production since 1975. This has served greatly to mobilize the enthusiasm of the masses to plant sugar cane and stimulate the development of sugar cane production. But viewing the present situation, the implementation and execution of some economic policies have not been good enough. In some localities county surplus yields were rewarded, but deductions for reduced yields were not carried out for many years. Some localities did not follow the policy of giving rewards of chemical fertilizers established by the province, and reduced the proportion of urea by themselves. Some reduced the ratio of exchange between sugar and food grains. Some commune brigades implemented the production responsibility system but did not provide the farmers with the material rewards promised. In some localities, the authorities did not pay cash for sugar cane purchases but had the payment transferred by the banks and credit cooperatives into the sellers' accounts. The money from the sale of sugar cane planted under contract by brigades and even commune members in contracted fields was taken to repay the debt of the collective, and in this way the money from the sale of sugar cane by the farmers was deducted here and there, and the farmers did not receive cash. The existence of these problems affected the enthusiasm of the masses in planting sugar cane. The Longxi region plans to plant 340,000 mu of sugar cane this year; only 87.9 percent has been completed. Out of 10 counties, the total planting area in 7 counties is less than that of last year by nearly 30,000 mu. A

few units did not follow provincial government regulations and failed to submit fees for technical improvement in sugar cane production to the agricultural departments, thus affecting scientific research in sugar cane, the hastened propagation and popularization of new and superior varieties and technical improvements. Therefore, to manage well the relationship among the state, the collective and the individual, the already established policy of linking sugar cane and food grain production must be conscientiously implemented. The farmers must be educated to strengthen their concept of the state and they must be taught to follow the arrangement of state plans; the state's sugar cane planting plans and the basic quotas to be submitted and sold to the state should be implemented down to the group and the individual; and rewards and deductions should be implemented according to policy to assure that food grains, fertilizers, sugar and money are all produced and given according to quotas and as promised so that the reasonable economic benefits and the enthusiasm in production of sugar cane of farmers can be protected. Technical improvement fees in sugar cane production should be collected by concerned units according to regulation in order to promote the development of scientific research in sugar cane and to popularize new technology.

9296
CSO: 4007/588

DATIAN COUNTY SOWS GRAINS TO COMPENSATE FOR RICE LOSS

Fuzhou FUJIAN RIBAO in Chinese 29 Jul 81 p 1

[Article: "Not Discouraged by Disasters, The Spirit of Work Is High and Enthusiastic--Datian County Sows Miscellaneous Grains to Make Up For Loss of Early Rice"]

[Text] The cadres and masses of Datian County have high spirits and are not discouraged by disasters. While managing well and planting well single season late rice and continuous crops of late rice, they sowed such miscellaneous crops as sweet potatoes, beans planted on ridges in fields, and autumn soybeans in order to achieve more harvests of food grains during the late season and to make up for the loss in the early season.

This year, the 100,000 mu of double season early rice in Datian County suffered from cold, disease and floods in varying degrees, causing a lot of damage. To mobilize the masses to resist disasters and achieve bumper harvests, the leading comrades of the county committee and the county government went deeply into the disaster regions to survey the loss and damage, to help the basic levels do the work of mass ideology well, to solve the difficulties of commune members in production and in daily life, and to calm emotions. In accordance with the conditions and characteristics of this county, sweet potatoes, beans planted on ridges in fields, and autumn soybeans and other miscellaneous crops were expanded. The commune members said happily that in the same situation of disaster and reduced harvests in the past, we were confused and we stopped plowing, but now we have utilized our hands and plows; our strength can be utilized for something. Each commune and brigade grasped the opportune time to expand the planting of miscellaneous grains, and at present the entire county has already expanded the planting of 18.27 million sweet potato plants, over 6,300 mu of beans planted on ridges in fields, and over 1,200 mu of other miscellaneous grains.

9296
CSO: 4007/588

INTENSIFICATION OF EFFORTS ON LATE RICE CROP IN HUIYANG DESCRIBED

Guangzhou NANFANG RIBAO in Chinese 9 Sep 81 p 1

[[Article by Xie Fufang [6200 0183 5364] and Yin Hengde [3009 5899 1795]: "Huiyang Prefecture Does a Solid Job of Late Crop Production; Absorbs Lessons of Reduced Yields from Early Crop to Lead Farmers in Scientific Farming"]

[Text] All echelons of leadership in Huiyang Prefecture have given attention to a summarization of lessons learned from early crop reduced yeilds, and have acted to take in hand late crop production to assure increased output and increased harvests this year.

Huiyang Prefecture has instituted various forms of a system of responsibility for production since this spring. In this situation, some county and commune leaders relaxed leadership over agricultural production for a time. Diseases and insect pests infested the early rice crop, but no one cared very much, and as a result, the prefecture lost the harvest from an area of more than 200,000 mu to diseases and insect pests. In addition, there were flood disasters, so the early rice crop for the prefecture fell by more than 230 million mu as compared with the same period last year. As a recently convened conference of prefecture and country party secretaries, everyone summarized the lessons learned from the early crop reduced output, and analyzed the production situation for the late crop, making up their minds to strengthen leadership over late crop production. Following the conference, the Prefecture CCP Committee sent out almost 100 cadres to six counties including Huidong and Zijin to assist the local cadres and masses with current production.

Simultaneous with their attention to late crop production, all echelons of leadership in Huiyang Prefecture placed guidance to the farmers in scientific farming in a commanding position. Their method of operation was: 1. Level by level establishment of "related households," and use of representative guidance for work over the area. In the two echelons of commune and brigade leadership at the Fucheng Commune in Longchuan County, "related households," were established consisting of 256 households. 2. Vigorous promotion of various forms of a system of farm technique contracts, bringing scientific farming knowledge home to the farmers. 3. Establishment above the county level of farm technique service companies, and the establishment below the county level of branch companies on an economic region basis. In addition to being responsible for guiding farming techniques, these organizations are also responsible for introduction of new pesticides, new fertilizers, and new farm machines to serve the masses of commune members.

Huiyang Prefecture's various counties have also effected distribution of the summer harvest, have perfected category 1 leadership groups in production teams, have instituted remuneration of cadres, and have solved remaining problems in social welfare and in debentures and liabilities in order to arouse the enthusiasm for production of cadres and commune members to do a good job with the late crop.

9432
CSO: 4007/7

XIANGYANG, JINGZHOU PREFECTURES BATTLE DROUGHT

Xiangyang Prefecture

Wuhan HUBEI RIBAO in Chinese 18 Aug 81 p 1

[Article by Jin Sheng [6855 5116]: "Pooling the Wisdom and Efforts of Everyone To Think of Every Means; The People of Xiangyang Prefecture Continue To Fight Drought"]

[Text] This year, severe drought not encountered since the founding of the nation has occurred in Xiangyang Prefecture. At present, drought is still persisting in most of the area. The people of the whole prefecture are firmly resisting disaster and grasping production to save themselves, using every way to seize foodgrains, grasp income, and lessen the loss caused by the disaster.

In the face of the severe drought, the people of the entire prefecture have continued to develop the spirit of resisting drought to the end, under the leadership of the party committee and government at each level. They have utilized every means and pooled the wisdom and efforts of everyone to resist drought in every mu and every fen of land. The over-100-million-square-meter Xionghe Reservoir in Zaoyang County now has only some 1,000 square meters of stagnant water, and the county government has organized over 150 pumps to draw water mechanically. To assure that the pumps operate under the best working conditions and to manage well and use well the water, which is as expensive as oil, over 800 people have worked under the hot sun and braved the severe summer heat eating and sleeping alongside the pumps. They have made sure water is supplied to the 50,000 mu of fields along the irrigated area, and they have expanded the area of irrigation by 4,700 mu. Yicheng County has increased facilities to draw water, moved water from the Xianghe, and expanded the area assured of harvests.

After 7 August, while continuing to carry out the struggle to resist drought, the severe disaster areas have also grasped production and self-help tightly and opened up more ways for production. Baokang County has transferred a lot of workers to engage in diversification and commune and brigade enterprises so as to strive toward the goal of increasing the per capita average income from diversification by 20 yuan. Oumiao Commune in Xiangyang County proposed: "Make up the loss in production of foodgrains by diversification; Make up the loss in production of the planting industry by livestock cultivation; make up the loss in agricultural production by sideline production." The whole commune planned to assign, 5,400 workers to such sideline production activities as blasting rocks, engaging in construction, transportation, firing kilns, panning for gold, and processing. Now, 1,500 workers have already

been assigned and they have already realized an income of 110,000 yuan. Dingjijui Brigade of Jiuji Commune in Nanzhang County has utilized the locality's mountain forests and grasslands to production mushrooms and to cut grass and fell firewood. This can generate an income of 6,000 yuan. While grasping collective industry and sideline production well, each locality also has helped commune members to carry out family sideline production well in a big way. Longtan Commune in Gucheng County has encouraged commune members to dig for ginger, and this has earned an income of over 4,000 yuan. The Zhongchang third production team has fully utilized the superiorities of large mountain grasslands and the abundance of feed grasses to develop private hog raising, sheep raising and cattle raising in a big way.

The party organization and government at each level have eased policies to mobilize the enthusiasm of the masses for production and self-help in regions of serious disaster where there are shortages in foodgrains, firewood, and grasses for production and for living. Xiangyang County has also appropriated 50,000 yuan and distributed 50 tons of alunite to localities where the supply of water for people and livestock is difficult. The office of the Pingjing administrative region of Nizu commune and commune members in the surrounding area did not have drinking water, so the county government appropriated 6,000 yuan to help them sink a well to provide drinking water for 800 people. The civil administration bureau of the county has also appropriated 25,000 yuan in disaster relief funds, and the health department has organized two medical teams to go into the villages. In Baokang County, 490 production teams and over 10,000 families have borrowed over 17,000 mu of land from the collective.

To strengthen leadership in production and self-help, of the total of 23 leading cadres of the standing committee of the prefectural party committee and the administrative office, three remained in the office to do the administrative work or were on sick leave, while the rest went to the villages to conduct surveys and studies, to participate in the struggle to resist drought, and to solve specific problems. The prefectural party committee also organized the responsible persons of each department to go to the villages to survey and study how departmental work can support the disaster area in overcoming difficulties.

Nanzhang County, Xiangyang

Wuhan HUBEI RIBAO in Chinese 21 Aug 81 p 2

[Article by the County Agricultural Office: "Organize Again, Mobilize Again, Encourage Again; Nanzhang County Launches the Struggle of Drought Resistance Profoundly"]

[Text] The Nanzhang County Party Committee has again organized and mobilized efforts to continue to launch the struggle of drought resistance profoundly.

This county [in Xiangyang Prefecture] began to resist drought during the middle of April this year. After the latter part of July, at the key moment when intermediate rice began to head and when the side crop of corn flowered and tassels emerged, the whole county still did not have any rain, the temperature rose drastically, and the area of drought resistance expanded day by day. Under this situation, many cadres and members of the masses became pessimistic, feared difficulties, and became passive and tired. In some localities, the leading ideology was relaxed, workers took it easy, and water pumps stopped working. In the face of this situation, the county party committee held an emergency meeting of third-level cadres in a timely way, following which it held a meeting of production team leaders, taking the

administrative region as the unit, to implement the spirit of the telephone conference on drought resistance conducte by the prefectural party committee, to guide everyone in analyzing the seriousness of the choking drought going on at present, to clearly understand the importance and the urgency of profoundly carrying out drought resistance, and to help everyone overcome pessimism and fear of difficulties and passive and tired emotions. Everyone said: After resisting drought in the paddy fields, we must resist drought in the arid fields; after resisting drougt in preparing the fields, we must resist drought to keep the roots alive. Now that the key moment has arrived, persisting to the end means victory; otherwise, all previous efforts will be wasted. On the basis of again organizing efforts, again mobilizing the people, and increasing understanding at each level, the high tide of drought resistance has been launched further. The number of workers assigned to drought resistance throughout the county has increased from 23,000 people to 40,000 people. The number of water pumps has increased from 1,668 units to 1,706 units. Water management groups have been established at each level, from county to production teams, and standards for the use of water have been clearly established. They require that water must not be seen in the fields, that the fields must not be dry, and that dampness and moisture in the fields must be preserved. In the order of using water, seed propagation must be satisfied first, then water must be assured for preserving unopened buds, then for preserving seedlings, and then for preserving multiple and late crops. Now, 3,130 mu of seed-propagation fields have been preserved by drought resistance, 115,000 mu of fields of unopened buds have been preserved, 49,000 mu of intermediate rice seedlings have been preserved, and drought resistance [efforts have been implemented over 20,000 mu of multiple and late crops. At the same time, management of the late crops has been grasped well. Prevention and control of disease and insect pests that affect paddy rice have been carried out well. Recently, the entire county used the method of special shifts and emergency measures and carried out a general control of disease and insect pests that affect intermediate rice. Disease and insect control measures have been carried out on three occasions on 40,000 mu of late corn in the mountain regions. Families have been assigned to take care of 210,000 mu of early and intermediate corn crops to make up for the losses caused by the disaster.

Jingshan County, Jingzhou

Wuhan HUBEI RIBAO in Chinese 21 Aug 81 p 2

[Article: "Leading Comrades of Jingshan County Enter Deep Into the Frontline of Drought Resistance"]

[Text] The leading comrades of the Jingshan County CCP Committee and the county people's government have gone deep into the frontline of the drought-resistance struggle, started from the actual situation, implemented separate guidance, actually strengthened the leadership in the struggle of drought resistance, and strived to defeat the evil drought and to seize bumper harvests in agriculture.

Since the latter part of April, Jingshan County [in Jingzhou Prefecture] has not had any soaking rain. After summer arrived, the drought continued to develop, most of the rivers in the county ceased to flow, and water in the dikes dryed up. The usable amount of water in the 167 large and medium-size reservoirs at present amounts to only 120 million cubic meters, and the distribution is extremely uneven. In most places, water sources are very difficult to find. The serious drought has severely threatened paddy and dryland crops. The loss of economic crops is also very great.

Facing this serious drought, the major leading comrades of the county party committee and the county government went separately to over 160 brigades of 14 communes throughout the county to inspect the drought, carry out surveys and studies, take charge of separate pieces of land, and lead the cadres and masses in resisting disaster and assuring bumper harvests. They carried out actual analyses according to the water sources and the degree to which [each] locality has been affected by drought, and implemented separate guidance. First, in places where the sources of water are relatively good--mainly the 131 brigades in the irrigated region of the several large reservoirs, with 62 percent of the total area of cultivated land of the whole county--the cadres and masses have been asked to utilize the favorable conditions of having good sources of water, to elevate the spirit of work, to increase measures, to grasp tightly the management of the middle and late growth period of intermediate rice, to use water rationally, to conserve the use of water, to transplant more double-season late rice, to realize increased yields and increased harvests and surpass contracted yields, and to use the surplus to make up for the shortage. Second, in regions where the drought is severe but there is water to resist drought--totaling 180 brigades and covering 210,000 mu of cultivated land--drought resistance is more difficult, water sources must be found, the mechanized labor force must be increased, and the irrigated area must be expanded to resist disaster and preserve the plans. Third, in regions where water sources have already basically dried up and where a reduced yield has already become definite--totaling 103 brigades covering 330,000 mu of farmland--the presently available water must be used well, ways must be thought of to preserve the seeds and to preserve foodgrain rations, dryland crops must be planted as a substitute as early as possible, diversification must be developed, and production must be actively begun for self-help. At present, 7,292 leading cadres at every level throughout Jingshan County, nearly 70,000 workers, and over 5,340 pieces of power machinery and electrical power driven machinery have joined the struggle to resist drought. Dams have been built at 1,222 places along the rivers, sand has been removed at 309 localities, and 344 ditches covering a length of 107 kilometers have been dug. Powerlines have been extended over 108 kilometers, and a full-scale people's war of drought resistance and preservation of bumper harvests is being launched throughout the county.

9296
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ALL TIME RECORD POTATO CROP IN ENSHI PREFECTURE REPORTED

Wuhan HUBEIN RIBAO in Chinese 23 Aug 81 p 1

[Article by Tian Yude [3944 5713 1795] and Huang Fasen [7806 4099 2773]: "Enshi Prefecture's Potato Output Exceeds Highest Records This Year. Linking of Production to Labor, Fixing Output Quotas on a Household Basis, and Fixing Work Quotas on a Household Basis in a System of Responsibility Manifests Results"]

[Text] One of China's most special areas for the growing of potatoes, Enishi Prefecture, reported the joyous news of a bumper harvest during the potato harvesting season this year from the hills to the mountains, and to the high mountain areas. Preliminary statistics for August showed a harvest from somewhat more than 2 million mu of more than 520 million jin of potatoes (converted to staple food grain) for the highest output on record.

Potatoes are a treasure of the mountain regions. They are a supplemental food for people living in the hills and not so high mountains, and the principal food of people living in the high mountains. Commune members say "Potatoes are a treasure of the mountains. With them, pigs can become fat; people can eat to the full; and during springtime scarcity, they can be depended upon." Potatoes can also be ground up to make starchy foods, which can be sent to other areas. Each year this prefecture provides large quantities of superor varieties to plains prefectures. Cadres and commune members alike place great importance on potato production. Though no quotas for delivery to the state exist, each echelon of leadership emphasizes adaptation of general methods to the local situation to grow a sufficient amount of good potatoes for the consumption of mountain area commune members, and for use as animal feed. In production management, attention is given to making the most of the initiative of individual commune members with the institution of production linked to labor, fixing output quotas on a household basis, and fixing work quotas on a household basis, which the people term the single crop that has been "most liberalized." As a result of "the greatest liberalization, harvest are greatest." In Badong and Jianshi counties, this year's per unit yields amounted to more than 300 jin (converted to staple grain terms). Xuanen and Xianfeng counties, which had always been low potato producers in the past, increased output this year by more than 20 percent. In both counties,some 10,000 jin of potato households appeared, and there were also quite a few 20,000 and 30,000 jin households.

Potatoes, which like chilly weather, came originally from the high mountains of Peru and Chile. According to Enshi Country records on "produce," potatoes came to Enshi more than 150 years ago, gradually becoming the major staple food crop

of the mountain areas. With the promotion of a system of responsibility for agricultural production during the past 2 years, potato yields have been consistent and high, making Enshi a famous national area of potato concentration. Last year Dr. Soye [phonetic and possibly Sawyer] of the International Potato Research Center conducted observations in Enshi, giving a very high evaluation to the large scale intercropping techniques for potatoes and corn, and to the growth and appearance of potatoes.

9432
CSO: 4007/7

EARLY RICE OUTPUT IN THREE COUNTIES REPORTED

Wuhan HUBEI RIBAO in Chinese 28 Aug 81 p 1

[Article by Peng Binwu [1756 2430 2976], Fang Shaozong [2455 4801 1350], Liang Qingsheng [2733 1987 3932], and Yu Zhangming [0151 4545 2494]: "Yunmeng County Fulfills Intermediate Maturing Early Rice Crop Requisition Procurement Quotas. Songzi County Joyously Reaps Bumper Harvest From 340,000 Mu of Early Rice; Huangpo Makes Use of Results of General Soil Survey to Win Bumper Early Rice Harvest"]

[Text] Following a bumper early rice crop this year in Yunmeng County, the broad masses of commune members carefully harvested and threshed it, sun-dried and winnowed it, and eagerly sold excess grain to the state. In the 22 day period between 2 and 24 August, the early rice procured throughout the county fulfilled in a single season the intermediate maturing early rice requisition procurement quotas assigned by higher authority, 65 days earlier than last year. The dryness, plumpness, cleanliness, and whiteness of paddy going into granaries was of top and intermediate quality. Comrades in the county grain department said that the speed with which the early rice went into storage this year, the fine quality of the rice, and the high enthusiasm of the farmers for selling their surplus grain to the state were unprecedented.

Following a 340,000 mu early rice crop bumper harvest in Songzi County this year, total output exceeded the great bumper crop of 1979, and showed a 26 percent increase over last year.

Songzi is a county with scant land relative to pupulation where cultivated land averages only 1.2 mu per person, and wetlands average only 0.6 mu per person. Existing water conservancy conditions there are being improved and scientific farming levels increased. Starting out with these realities, the early rice crop area was expanded by 30,000 mu this year. Before and after autumn sowing last year, readjustment in the sequencing of crops was done. This March a special conference was also held to study specific methods. As a result of the implementation of the party's policies and strict attention to various measures for increasing yields, this year's bumper harvest from the early rice crop was gained. Right now the broad masses of commune members are eagerly tendering grain to the state and selling excess grain.

Huangpo County has put to use the results of a general soil survey and has increased levels of scientific farming to win a bumper early rice crop harvest.

As a result of a general soil survey, Huangpo County derived an understanding of the physical and chemical properties and the fertility of its soil, providing scientific data for rational use of fertilizer. As a result of the general soil survey, it was discovered that 77 percent of the 930,000 mu of cultivated land throughout the county lacked nitrogen; that 82 percent lacked phosphate; and that 42 percent lacked potassium. Beginning last year, the Huangpo County CCP Committee vigorously propagandized popularization of knowledge about scientific fertilization, guiding the masses in fertilizing in accordance with soil needs, applying fertilizer as needed, applying prescribed kinds of fertilizer, and changing the past practice of blind fertilization, fertilizing all fields equally, and using only a single kind of fertilizer. This year, 200,000 mu of the county's 550,000 mu of early rice fields were given prescribed applications of fertilizer. This plus meticulous care brought about a 14.7 percent increase over last year in this year's total early rice crop output.

9432
CSO: 4007/7

ELECTRIC POWER PROVIDED THROUGHOUT XIANNING PREFECTURE

Wuhan HUBEI RIBAO in Chinese 17 Aug 81 p 2

[Article by correspondent Liu Jimin [0491 0679 3046] and reporter Li Rongkui [2621 2837 5525]: "Golden Wings for the Overall Development of Agriculture; Xianning Prefecture's Power Department Supports Agriculture With Outstanding Achievements"]

[Text] Over more than 12,000 square kilometers in southern Hubei, over mountains, and over the lake region, iron supports stand magnificently with silver lines hanging from one support to the next, covering the entire region. They constitute the power network which has provided light and power to the communes and brigades and which has provided a pair of golden wings for the overall development of agriculture, forestry, livestock production, sideline production, and fishery. According to information provided by the relevant departments, as of the end of June this year all of the towns in the entire prefecture now have electricity. Furthermore, 98 percent of the communes, 81 percent of the brigades, 70 percent of the production teams, and 84 percent of farm families now have light and electricity for drainage and irrigation and for threshing and processing of agricultural sideline products.

Providing electric power on the basis of the needs of agricultural development is an outstanding characteristic in electric power construction in Xianning Prefecture. In 1965, when Xianning Prefecture was established, electric power was basically very scarce. The power network covered only 4 communes and 120 production teams in the seven counties except for the county seat of the prefecture. Total annual power supply was 3.3 million kilowatt-hours; the per capita average was only 1.25 kilowatt-hours. After the smashing of the "gang of four," the electric power and water conservancy departments of the prefecture joined forces and concentrated their finances, material power, and manpower to provide power for agriculture. During the 4 years from 1977 to 1980 [inclusive], the electric power department invested 10.47 million yuan in capital to construct a supply of power to agriculture; this constituted 68 percent of the total investment in electric power. The mountain regions, counties, and communes utilized the rich hydraulic resources and built 318 hydroelectric power stations with a total installed capacity of 52,421 kilowatts. Annual output reached over 85 million kilowatt-hours. These small hydroelectric power stations scattered in the high mountain valleys operated in parallel with the national power network, thus forming a relatively complete regional power system. The entire prefecture set up a total of 14,415 kilometers of high-and low-voltage lines, equivalent to the length of six Beijing-Guangzhou railroads. A total of 46 transformer stations were built to transform 35 kilovolts to 110 kilovolts, and 4,067 distribution transformer units were set up with a total capacity of 396,162 kilovolt-amperes. The

total capacity of the transformer stations of the network, those in addition to the network, and those belonging to industry and agriculture reached 348,950 kilovolt-amperes, an increase of 26.7 times over that in 1965. In 1980, the entire prefecture had a power supply of 459.21 million kilowatt-hours; the per capita average was 174 kilowatt-hours--a 139 fold increase over 1965.

The electric power department of the entire region thought what agriculture thought, and at the end of 1980 it built and put into operation nine transformer stations, each with a 110-kilovolt capacity. Five of them served agriculture, while the remaining four partially served agriculture. Last year, to eliminate the power supply shortage, solve the conflict between large loads of power consumption for drainage and irrigation in agriculture, and increase the capability of farmland to resist disasters, the power departments overcame difficulties and increased the capacity of the transformers by 92,500 kilovolt-amperes, which was 46 percent of the total capacity originally available. In 1980, through new projects, major repairs, and improvement and systematization projects, the entire prefecture added electricity to one more commune, improved and expanded the benefits of power supply to 31 communes, 178 production brigades, 993 production teams and 3 farms, and expanded and improved the area benefited by electric power by over 500,000 mu. According to statistics at the end of 1980, of the 3.08 million mu of cultivated land in the entire prefecture (including 2.06 million mu of paddy fields), mechanized drainage and irrigation already covered 2 million mu, constituting 64.2 percent of the total area of cultivated land.

"Do not become the 'electric power bureaucracy' that buries agriculture; be the 'vanguard' in supporting agriculture." The party organization of the Electric Power Bureau of Xianning Prefecture and all the workers insisted on the guideline of "centering your efforts on serving agriculture," overcame various difficulties, and sent electric power where it was needed. Some of the production teams of Songhe, Shenshan, and Xiliang communes, the important foodgrain and fishery production region in Puqi County, still did not have electricity in 1979 because they were located in the remote lake region. Collective production and the life of the masses were very difficult. Last year, the Electric Power Bureau of the prefecture invested over 500,000 yuan and built a 35-kilovolt transformer station at Futou, thereby solving the difficulties of the communes and brigades in [getting] electric power for agricultural production, for commune and brigade enterprises, and for living. The commune members were all happy, and thus the plan to supply electricity to every commune in Puqi County was realized.

9296
CSO: 4007/575

BRIEFS

COUNTY DIVERSIFIED ECONOMY--Dongtai County in Jiangsu Province actively develops diversified economy and sideline production. From January to August this year, the total collective income from sideline production reached 23 million yuan, 6 million yuan more than that in the same period last year. During the same period, peasants in the county sold 310,000 hogs, over 300,000 head of poultry and 69,000 dan of eggs to the state. [OW071429 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 7 Oct 81]

CSO: 4007/33

BUMPER COTTON HARVEST SHOWS CORRECTNESS OF PARTY LINE

Jinan DAZHONG RIBAO in Chinese 27 Aug 81 p 3

[Article by Wang Dianchen [3769 3013 5256]: "Starting Out From the Actual Situation To Carry Out Agricultural Production Well"]

[Text] Practical experience over many years proves that to carry out agricultural production well, we must start from the actual situation and we must act according to natural patterns and economic patterns.

Everything must start from the actual situation, theory must relate to the actual situation, and truth must be sought from facts; these are the ideological line of Marxist dialectic materialism reaffirmed by the party's Third Plenum and always advocated by Comrade Mao Zedong. They are the theoretical reference and the ideological foundation for establishing the party's guidelines and policies, and they are the assurance of implementation of the party's political line. In agricultural production, the people and masses have accumulated experiences in crop distribution that are suitable to local conditions, arrangement of the crops, combinations of varieties, planting methods, and management experience over a long period of practice in production. These basically coincide with objective patterns. Starting out from the actual situation and suiting measures to local circumstances can produce good economic results in developing agricultural production. Production will suffer a loss if we remove ourselves from the actual situation, if we do not respect the practical experience of the masses, or if we command blindly.

Our Dezhou Prefecture has historically been a concentrated cotton-producing region. Sandy loam constitutes over one-half of the total area of cultivated land throughout the whole prefecture. It is suitable for planting cotton. The weather conditions also are favorable to the growth of cotton. There is a long history of planting cotton, and the masses have the requirements and the experience for planting cotton. But in the past, because of the influence of leftist ideology, the relationship between foodgrains and cotton was not handled well, food grain production was unilaterally emphasized, foodgrains were used to squeeze out cotton, and starting in 1960, the cotton yield dropped on a large scale. During the 20 years before 1978, the average annual total yield was 589,000 dan, 321,000 less than the average annual yield during the "1.5" period. Because we violated natural patterns and economic patterns, cotton production dropped and foodgrain production did not increase. During this period, the total annual yield of foodgrains was 1.91 billion jin--640 million jin less than the yield in 1956. In 1978, per capita average distribution

was 47 yuan (of course, the population had increased), 20 yuan less than that in 1958. The masses said discontentedly: "Working hard for 20 years, each year we get 1 yuan less."

The Third Plenum of the party revived the party's ideological line of seeking truth from facts, criticized the leftist ideology in economic work, and emphasized doing work according to the objective pattern. This is a great change in economic work. To rapidly develop agricultural production, the party committee and government at each level in Dezhou Prefecture conscientiously learned and implemented the spirit of the Third Plenum and the Central Committee's decision concerning agriculture, and decided on the work guidelines according to the actual situation in [each] locality. First, we actively readjusted the internal structure of agriculture, determined to expand the area of cottonfields; developed local superiority, and insisted on developing cotton production to further enliven the entire agricultural sector. On the basis of surveys and studies, we conscientiously summarized past experiences and lessons in cotton production, analyzed favorable conditions, and established advanced models so that people could generally understand that developing cotton production is the key measure for our region to carry out the work of agricultural readjustment well. As people have pointed out, "to change poverty into wealth, we must follow the road to developing cotton;" "to remove poverty and backwardness, we must follow the road of developing cotton;" "grasping cotton and stimulating foodgrain production will lead other businesses." Then we readjusted the productive relationship. We widely implemented the various forms of the production responsibility system and the contract system of accounting wages in joint production down to the laborer and to the family throughout the prefecture, and we mobilized the productive enthusiasm of commune members. There upon, "joint production is like joint hearts"; "one person manages cotton, the whole family joins in"; "there are people everywhere but they are not in groups, as each working individual is busy by himself." At the same time, we also grasped the key measures to increase production; we popularly utilized the superior variety lu mian No 1, implemented scientific planting, and managed in a fine way. Because everyone worked with one heart and mind, our region's cotton production again showed a welcome situation. In 1980, the whole prefecture planted 2.12 million mu of cotton, and the total yield reached 2.03 million dan, the highest level in history. The total annual production value of agriculture increased 16 percent over the previous year.

The bumper harvest of cotton caused the situation in the entire prefecture to change greatly. First, it increased the contribution to the state. In 1980, a total of 1.96 milllion dan of ginned cotton was sold to the state. Second, it strengthened the collective economy. Cottonfields constituted 20 percent of the area of cultivated land. The production value constitued 60 percent of agricultural income. It provided production funds for expanding reproduction. Third, it increased the income of commune members. Throughout the prefecture, per capita distribution was 88 yuan, an increase of 37.9 yuan or 75 percent over the annual average per capita income in 1979. Fourth, it increased the level of rations of foodgrains for commune members according to policy regulations. Fifth, it increased fertilizers. A total of 200 million jin of cottonseed cakes were produced, and the reward and sale of chemical fertilizers received were generally equivalent to 1 mu of cotton assuring 1 mu of foodgrains. Sixth, it expanded the source of oil crops. A total of 49 million jin of cottonseed oil was produced. On average, each commune member produced 10 jin of this item alone. Seventh, it promoted the development of state-operated and commune and brigade industries and sideline production. Eighth, it activated the farm village economy. The whole prefecture retrieved over 100 million yuan in loans, savings of commune

members greatly increased, the market was prosperous, and purchases and sales were active. Ninth, it made the relationship between cadres and the masses close, and it strengthened unity. Tenth, it encouraged the people's revolutionary spirit and established the foundation for progress.

The example of cotton production [going] from a big decline to a big rise in Dezhou Prefecture reminds us that readjusting the internal structure of agriculture and developing agricultural production must follow the party's ideological line of seeking truth from facts. When our thoughts coincide with objective reality, we can depend on the actual situation to determine our work guidelines and we can obtain victory. The Sixth Plenum of the Party further affirmed the ideological line of seeking truth from facts. The conference passed the "Resolution Concerning the Several Historical Problems of the Party Since the Founding of the Nation," and seeking truth from facts was taken as one of the fundamental aspects that make up Mao Zedong Thought. It also pointed out that our party must always insist on this ideological line. We must conscientiously learn the spirit of the Sixth Plenum, start out from the actual situation, make great efforts, to do economic work well, unite, and exert efforts in the struggle to build a strong socialist nation.

9296
CSO: 4007/582

BRIEFS

PREFECTURE TOBACCO--Jinan, 7 Oct (XINHUA)--Weifang Prefecture, Shandong, reaped a bumper harvest of flue-cured tobacco from its 780,000 mu, with total output reaching 2.42 million dan, a 15 percent increase over last year. As of 25 September, the prefecture had procured 2.05 million dan of flue-cured tobacco, overfulfilling the state plan. [Beijing XINHUA Domestic Service in Chinese 0111 GMT 7 Oct 81]

CSO: 4007/33

WAYS TO REDUCE COLD DAMAGE TO LATE RICE CROP CHARTED

Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 5 Aug 81 pp 4-6

[Article by Ding Changling [0002 2490 7881], Gu Yukang [7357 5940 1660], and Liu Guoying [0491 0948 5391]: "The Way To Reduce Cold Damage to Late Rice"*]

[Text] The season for late rice production in the Shanghai suburbs is extremely short. In the 10-year period between 1969 and 1978, yields fluctuated from 512 to 732 jin per mu, averaging 612.1 ± 69.4 jin, the variation coefficient amounting to 11.3 percent. As a result of abnormal weather in 1980, yields were only about 360 jin per mu, lower than any year since 1963. The principal cause for the decrease in yields was cold damage. Therefore, analysis of the laws governing damage to the late rice crop caused by low temperatures is of definite value for reference in setting appropriate farming methods to win consistent and high yields.

1. Damage to Late Rice Caused by Low Temperatures in Shanghai Suburbs

During the period of meiotic division of the pollen mother cell and the period of full heading and flowering, paddy rice is most sensitive to low temperatures. According to observations made by Li Rongqian [0448 1369 0578] et al, should paddy rice encounter low temperatures during the early meiotic division stage, the pollen mother cell will abort. If low temperatures are encountered between the mid stage of meiotic division and the tetrad stage, regression in the chromosomes or unevenness in distribution of chromosomes will occur. During 8 and 9 September 1979, a minimum temperature of 17°C prevailed. Late rice crop field survey data from Fengbin Commune in Jiading County, from Huacao and Jiwang communes in Shanghai County, from Zhuangxing Commune in Fengxian County, and from this institute's experimental farm showed that between 18 and 20 September the fully headed late rice sustained varying degrees of damage. Inasmuch as most panicle grains were in the early or mid-stage of meiosis on 8 September, the plots on which full heading had taken place by 20 September were fairly severely damaged with an empty glume rate of between 43 and 47 percent. In the case of the plots that were fully headed by 19 September, on 8 September most of the panicle grains were in the mid or late stage of meiosis, so damage was relatively slight, the empty glume rate being between 26.2 and 31.1 percent. In plots that were fully headed on 18 September, most of the panicle grains were in the final stage of meiosis or meiosis had been completed as of 8 September, and thus

*Comrades Pan Deliang [3382 1795 5328] and Song Yonghe [1345 3057 0735] participated in the survey work.

damage in such plots was lightest. Those plots that were fully headed on 22 September began meiosis only on 10 September after the low temperatures had passed; thus their fruiting was normal.

When paddy rice encounters low temperatures during the period of full heading and flowering, damage is also very serious. Observations made by Wang Hongchun [3769 3163 2504] et al show the critical temperature for cold damage to be temperatures averaging 20°C daily. The principal manifestation of damage is a decline in the pollen germination rate, and a weakening in the fertilization rate of ova.

Inasmuch as geng rice is characterized by a short period of "inactive flowers tolerant of cold," 1 day of low temperatures that holds back flowering has no effect on fruiting; 2 days of low temperatures cause some damage; and 3 days or more of low temperatures seriously damage the flowering organs. The number of empty seeds increase, and the empty glume rate increases. According to observations made by the agriculture meteorology office of this institute, after 24 September in 1979 average daily temperatures remained below 20°C; consequently, plots in which full heading took place after 24 September were struck with low temperature damage during the flowering stage, and the later the full heading, the greater the damage, with an empty glume rate of between 40.8 and 100 percent.

In 1980, beginning on 19 September, average daily temperatures continued to fall below 20°C, and weather was continuously overcast and rainy. A guapai [2229 3654] observation shows that when Jianong 15 reached full heading from 23 to 25 September, the fruiting rate averaged only 17.5 percent (Average daily temperatures for the period 23 to 27 September were 18.2, 18.4, 18.4, 19.0, and 19.1°C), and the more than 400,000 mu of late rice planted in the suburbs after 10 August developed serious "raised panicle heads." The more than 700,000 mu planted between Liqiu [7 August] and 10 August had a very low fruiting rate, giving rise to a tremendous decrease in yields such as had rarely been seen in more than 10 years.

Analysis of meteorological data for the period 1873-1972 by the Municipal Meteorology Bureau shows that beginning on 16 September in Shanghai, the flowering period sustained more than 3 days of continuously low temperatures. In 4 years out of 100, late rice that fully headed prior to 18 September encountered low temperatures during the flowering period, and in 5 years, more than 2 days of minimum daily temperatures lower than 17°C occurred during meiosis. When full heading occurred before 20 September it was 10 years and 7 years respectively, with low temperature damage occurring twice in one of the years for a cold damage rate of 16 percent. When full heading took place before 25 September, the rate was 42 percent, and when full heading took place before 30 September, it was 64 percent (Chart 2).

According to incomplete statistics, about 400,000 mu or more of late rice had "raised panicle heads" as a result of cold damage in 1971. In 1972, it was somewhat more than 200,000 mu, and during 1974, 1976, 1977, and 1979, a substantial area suffered damage as well. In 1980, an area of about 1 million mu or

more was damaged in varying degrees. In 1971, yields were only 512 jin per mu; in 1972, they were 525 jin per mu; and for 1974, 1976, and 1977, yields were 605, 611, and 597 jin per mu respectively. In 1980, yields were only 360 jin per mu. This shows that cold damage is the principal cause for inconsistent yields from the late rice crop in the suburbs.

2. Major Current Problems in Late Rice Output

In the suburbs, the early rice is harvested, for the most part, prior to 5 August. The season for transplanting the late rice crop is very hurried, and the later the transplanting is done, the lower the yields. According to statistics, Jianong 15 is transplanted between 31 July and 12 August, and yields per mu decline in a straight line with delay in the transplanting period. For each day's delay, yields fall by about 27 jin. (Chart 1)

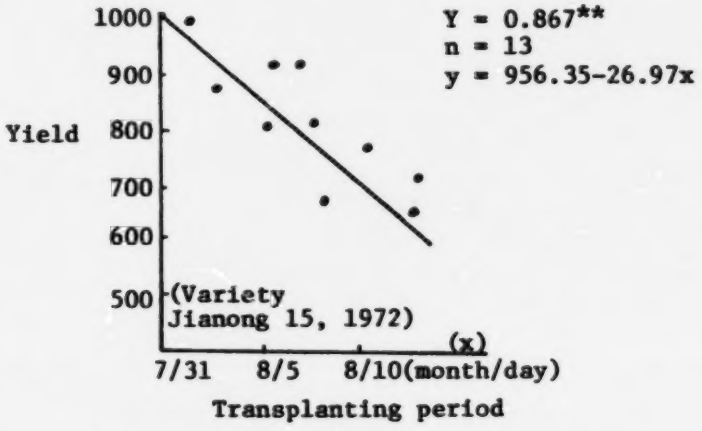

Chart 1. Relationship Between Time of Transplanting and Yields

Because of the excessively large proportion of medium and late ripening varieties of early rice planted in the suburbs and their late harvesting, the transplanting of late rice is thoroughly delayed. In 1980, Yuanfengzao and Zhongganzao accounted for about 65 percent of the early rice planted (ripening between 3 and 5 August), and Guangliuai No 4 accounted for about 25.5 percent of the total (ripening between 6 and 8 August). In 1980, 1.17 million mu of late rice was transplanted after Liqiu [7 August]. This amounted to 48 percent of the total late rice area. In years of normal weather conditions, such fields produce well, but in years of low temperatures, yields are very low. Low temperatures are the root of the trouble of "low and inconsistent" yields from the late rice crop.

Though some readjustments have been made in the suburban farming system in recent years, with the area planted to a single crop late rice being expanded in 1981 from the approximately 100,000 mu of the past several years to around 500,000 mu, nevertheless, in places where there is a lot of land relative to the labor force, an excessively large three crop system is still very prominent.

In their transplanting of late rice in 1980, some communes and brigades dragged along until after 18 August before completing the task. Virtually no grain was harvested from these plots. Therefore, late planting with attendant proneness to cold damage is the fundamental reason for low yields from the late rice crop.

3. Ways To Reduce Cold Damage

1. Sowing and Transplanting Time in an Effort To Get Safe Heading

Research shows that for Jianong 15 and Shuangfeng No 1, two dominant varieties, differentiation of the young panicle requires about 30 days. Completion of differentiation of the young panicle on main stems until 80 percent of the rice plants in an entire field have completely headed takes about 5 days. In order to get consistent yields, the vegetative growth stage in open fields must be at least 10 days, and a minimum of 45 days of growth is required from the time of transplanting until complete heading. This may be termed the "consistent yield critical growth stage." If one figures about an 80 percent rate of certainty of no cold damage as an index for safe full heading, i.e. taking 22 September as the safe date for full heading; then, if Jianong 15 or Shuangfeng No 1 are sown around 20 June, the corresponding "critical transplanting time for consistent yields" will be 8 August. Transplanting after 8 August, no matter that the vegetative growth stage in the fields is shortened, will result in a decline in yields, and if cold damage suddenly strikes, tremendous drops in yields may occur. In order to assure timely sowing and transplanting of late crop rice, it is necessary to readjust crop patterns to promote early ripening of the early rice crop. Early ripening barley and naked barley varieties that ripen between 15 and 20 May should be used for the most part, and the early rice crop should be sown and transplanted early, no transplanting being done in June. Then ripening will occur at the end of July or in early August, and transplanting of the late rice crop may be done before Liqiu [7 August]. Alternatively, principally early ripening varieties of early rice may be used, varieties such as "Chengxizao," which ripen from 3 to 4 days earlier than Yuanfengzao, enabling the early sowing and early transplanting of the late rice crop to assure that heading is completed safely.

2. Selection of Cold Resistant Varieties for Use To Increase the Fruiting Rate

Cold resistance varies very greatly from one variety to another. Observations using an artificial climate chamber were conducted by Comrade Chen Yiqing [7115 0001 3237] of this institute during meiosis using a processing temperature of 17°C ± 0.5°C, an illumination of 8,000-10,000 lux, a relative humidity of 80 percent ±10 and a variable [chu li 5710 3810] 5 days fruiting rate for [results of] 88.3 percent for Huahanzao, and of 86.7 percent for 6366. For Jianong 15, it was 31.9 percent, and for Shuangfeng No 4, 41.0 percent. A flowering period with a variable [chuli] fruiting rate resulted in 76.6 percent for Huahanzao, of 60.1 percent for 6366, and of 39.4 percent for Jianong 15, which were identical with observations made under field conditions. Preliminary findings were that the cold damage critical temperature for Huahanzao and 6366 was somewhat lower than for Jianong 15 and such varieties. If 21 September is taken as the day of full heading, the cold damage rate is only 5 percent, a situation encountered only 1 year in 20. (Chart 2) It may be seen that selection of cold resistant varieties to reduce cold damage is practicable and workable.

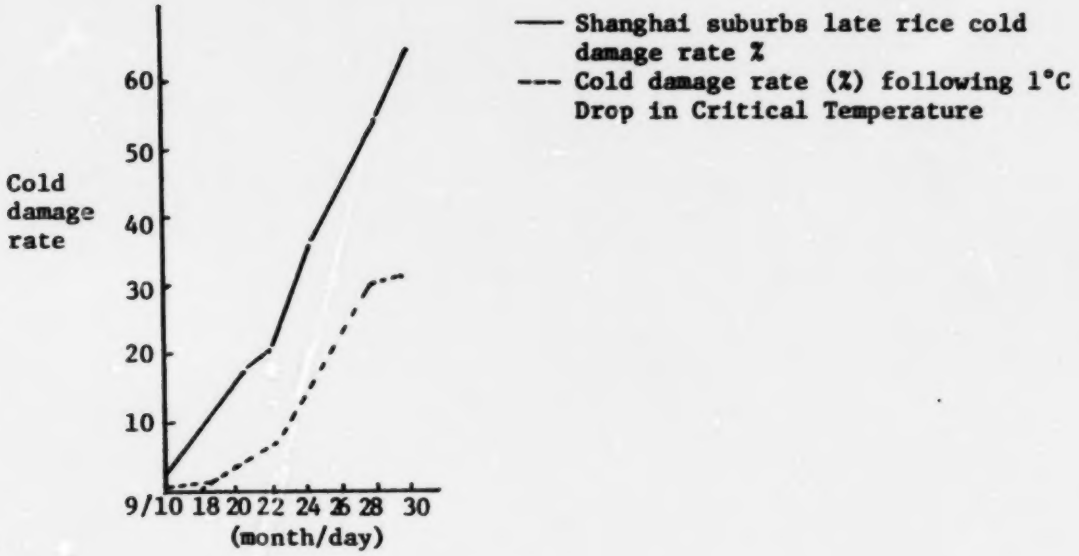

Chart 2. Late Rice Cold Damage Rate (percent)

3. Use of Early Ripening Varieties To Advance Full Heading

Use of varieties with bumper harvest characteristics that have a short growing season, and which may be planted at a suitably early time to attain full heading in advance of cold temperatures is an effective way to reduce cold damage and to assure consistent yields. The new 751 variety bred by our laboratory has a total growth period of 124 to 130 days as a late rice crop. The period of time between sowing and full heading is 80 to 85 days. Usually it is sown around 25 June and transplanted in early August. It fully heads around 16 September. As a late rice crop, panicles may number more than 320,000 per mu, each panicle containing about 70 grains. If sown and transplanted early, it can ripen before the onset of low temperatures to produce high yields. A shortcoming is its poor tolerance of cold, and if transplanting is delayed, it is prone to cold damage. The growth period for Huahanzao is about the same as for 751. If planted and transplanted early enough, heading will be early and cold temperatures avoided thus producing high yields. (see table)

Variety	751					Huahanzao			
Item \ Year	1976	1977	1978	1979	1980	1977	1978	1979	1980
Sowing date month/day	6/24	6/25	7/3	6/30	6/22	6/25	6/27	6/29	6/28
Transplanting date month/day	8/2	8/5	8/9	7/30	7/30	8/3	/	8/7	8/5
Full heading date month/day	9/14	9/16	9/21	9/18	9/15	9/17	9/15	9/13	9/21
Ripening date month/day	10/29	10/28	11/4	10/31	10/30	10/30	10/30	11/4	10/31
Yield (jin)	/	803.3	945.0	706.0	619.3	830	/	744.2	539.7

Additionally, commune and brigades that are overusing the three crop system and producing very low yields should first give attention to performing farming tasks in their proper season and making sensible readjustments as an important matter.

To summarize the foregoing, though low temperatures in the Shanghai suburbs cause fairly great damage to the late rice crop, if the laws governing cold damage are diligently analyzed, and research conducted in breeding and farming, victory over low temperatures is possible, and the winning of consistently high yields is entirely possible.

9432
CSO: 4007/3

SHANGHAI MEETING CALLS FOR STRENGTHENING AGRICULTURE

Shanghai JIEFANG RIBAO in Chinese 27 Aug 81 p 1

[Article: "A Meeting of the Secretaries of the Party Committees of the City's Communes and Farms Clarifies the Guiding Ideology for Suburban Economic Work: Strengthen Agriculture, Develop Sidelines, and Readjust Industry; Everyone Ordered To Learn and Implement the Spirit of the Sixth Plenum and Strengthen Ideological and Political Work"]

[Text] A meeting of the party committee secretaries of suburban communes and farms, called by the party unit of the city's agricultural committee, ended yesterday.

The deputy secretary of the city committee, Comrade Chen Yi [7115 3085], spoke at yesterday's meeting on the subject of firmly implementing the spirit of the Sixth Plenum and strengthening ideological and political work in the farm villages. He pointed out that Communist Party members must unconditionally obey the decisions of the party. The goal of learning is to implement and execute the decisions; this is acting practically. During the meeting, responsible comrades Chen Dongpo [7115 2639 3134] and Li Chongxun [7812 1504 8113] of the city's economic committee and science committee spoke on conserving energy and greatly developing methane in farm villages. They asked the party committee at each level of the suburban region to emphasize the development of methane, conscientiously to carry out the policy of developing methane, and actively to solve the actual problems encountered in developing methane gas.

At this meeting, Chen Zonglie [7115 1350 3525], standing committee member of the municipal party committee and secretary of the party unit of the city's agricultural committee, reported on the assignment of work in the suburban region. The meeting used the spirit of the Sixth Plenum as the guide and carried out repeated discussions of the questions surrounding the topics of further developing economic work and greatly strengthening ideological and political work. Some comrades also initiated criticism and self-criticism, in view of the actual problems existing in the present work.

This meeting analyzed on an overall basis the economic situation in the farm villages outside the city, and it believed unanimously that since the smashing of the "gang of four," and especially since the Third Plenum, under the guidance of the series of important documents and guidelines and policies of the Central Committee concerning the development of agriculture, agriculture outside the city has gradually shaken off the confines of leftist ideology and has progressed toward the road of healthy development: The total production value of agriculture, sideline production, and

industry in the whole suburban area increased about 3 billion yuan within the 3 years after the Third Plenum. In 1980, the per capita productive value of the 5 million people in the suburban region reached 1,524 yuan. Since the beginning of this year, with the progress of eradicating leftist ideological influences from the economic battlefront, the yield and production value of agriculture, sideline production, and industry of the suburban region again have realized new increases. During the first half of the year, the total income of the three levels of the commune economy of the whole suburban region was 2 billion yuan, an increase of over 270 million yuan and an increase of 16 percent over the same period last year. Summer foodgrains and early rice realized bumper harvests one after the other throughout the suburban region, and the average unit yield of early rice increased nearly 15 percent over last year.

The meeting carried out a full discussion and further clarified the guiding ideology of economic work in the suburban area for this year and next. This means continuing to strengthen agriculture, develop sideline production, and reorganize industry. The ratio of the production value of the suburban area's agriculture to industry and sideline production at present is "3 to 7"--i.e., agriculture constitutes only about 30 percent, while industry and sideline production constitute about 70 percent. In general, the direction of development is correct, but the ideology of taking agriculture as the foundation cannot be shaken. The conference asked that when the leadership at each level in the farm villages deals with the relationship among agriculture, sideline production, and industry, there must be the concept of comprehensive balance. One must fully recognize that suburban agriculture serves the city directly, and doing it well or doing it poorly has a great effect; thus the link of agriculture must be grasped tightly. The conference also fully discussed the opinions concerning the suiting of measures to local circumstances in implementing the various forms of the joint production responsibility system, as proposed by the party unit of the city's agricultural committee. Many comrades believe this opinion fits the actual situation of analyzing the characteristics of the suburban area and the analysis of the advantages and shortcomings of the various forms of the joint production responsibility system. They emphasized respect for the situation of the production teams and the wishes of the people; emphasized suiting measures to local circumstances, suiting measures to the circumstances of the production team, and suiting measures to the circumstances of the crops in selecting the responsiblity system; and emphasized respect for the wishes of the cadres and masses. The meeting asked that the three links of the responsibility system, diversification and reorganization of financial management of the communes and brigades be tightly grasped, and it asked that economic work in the suburban region be pushed a step further concretely.

Comrades attending the conference believed that in order to push the economic work of the suburban region further, the key is to strengthen the party's leadership, to correct the party's workstyle, and to elevate the spirit. Everyone indicated that in future work in the farm villages, the party's three great styles must be developed, contact must be kept with the masses, surveys and studies must be conscientiously carried out, the situation must be clearly understood so that everyone will be ready, and, at the same time, criticism and self-criticism should be initiated and things must be done strictly according to "norms and regulations." The conference also proposed specific demands to change the style of the party and to heighten spirit by pointing out the actual situation and the problems existing at present.

9296
CSO: 4007/582

DEVELOPMENT, RESOURCES IN FISHERY PRODUCTION NOTED

Increased Yield

Taiyuan SHANXI RIBAO in Chinese 6 Aug 81 p 1

[Article by the Production Department of the provincial Agricultural Committee: "Fully Utilize Water Surface Resources, Actively Develop Fishery Production; Our Province's Aquatic Business Gradually Develops"]

[Text] Since the Third Plenum of the party, because the "leftist" mistakes have been corrected, our province is now rapidly reviving fishery production. Last year, the entire province's area of water surface for fish culture reached 235,700 mu, an increase of over 33,000 mu from the area before the Third Plenum. The total yield of mature fish was 1.592 million jin, an increase of one-third over 1977, before the Third Plenum.

In recent years, the development in our province's fishery production has been due mainly to the implementation of the policies and guidelines of the party Central Committee. First, while greatly developing presently available lakes, reservoirs and ponds to raise fish, we also fully utilized our province's favorable conditions of having extensive beaches along the banks of the Yellow River to actively develop fish raising in ponds and to establish bases for commercial fish production. The Ruicheng and Yongji commercial fish bases cover an area of 3,310 mu, and 1,579 mu have already entered into production. The initial catch of mature fish was 54,000 jin, an average per mu yield of the ponds throughout the province. Second, we fully utilized small rivers and springs to establish production bases for cold water fish species. The two rainbow trout farms, Jinci in Taiyuan city and Shentou in Shuo Xian, produce an average per mu yield of 12,000 jin. They have created experience in increased yields for our province's large area cultivation of rainbow trout. Third, we utilized hot springs and surplus hot water from factories to cultivate herring. The Podi Brigade at Niangziguan utilized surplus heat exhausted from the power plant to raise herring; the per mu yield reached 12,000 jin, creating experience for the development of herring in a big way throughout the province. In addition, artificial cultivation and propagation of giant salamander of Hengqu and soft shelled turtle of Lingqiu are being carried out.

Untapped Resources

Taiyuan SHANXI RIBAO in Chinese 6 Aug 81 p 1

[Article by staff commentator: "Our Province's Fishery Production Has a Bright Future--Seventh Article On Actively Developing Diversification in Farm Villages"]

[Text] Our province's fishery production was originally very weak, and with the addition of the influence of the mistaken "leftist" ideology of the past few years, food grain production was unilaterally emphasized, diversification was neglected, some portions of the water surfaces were wasted, fishery production regressed, and the total yield was third from last in the nation. After the party's Third Plenum, fishery production has revived but it still has not reached the best level in history.

Our province's fishery is backward. Is this because our province does not have the conditions? No, let us briefly talk about some statistics: Our province now has a total water surface of 230,000 mu, including reservoirs, lakes and ponds; this is a good condition for developing fishery production. If each locality would strengthen management to increase the present average per mu yield of 6 jin 7 liang to the national average of 39 jin, then just this item alone could produce a yield reaching 8.97 million jin. Our province has over 2 million mu of unclaimed river beaches and saline and alkaline beaches which can be utilized for raising fish. With a little investment to utilize the wasteland to build a commercial fish base of 50,000 mu, a per mu yield of 100 jin would total 5 million jin. In addition, our province has 80 counties which have conditions for developing fish culture in suburbs: there are many power plants that produce surplus hot water and hot springs that could be used to raise luofei fish. There is also some cold spring water that can be used to raise rainbow trout. If all these resources were utilized, the total yield of fish a year throughout the province could reach over 17 million jin, 11 times the present yield.

The main reason our province's fishery is backward is that we do not have a sufficient understanding of fishery production. We did not grasp it as an important item in developing diversification. If the party committee and the people's government at each level would pay attention to this problem, include it in the daily schedule, and take forceful measures, fishery production could be greatly developed. Now, in some localities, "there is no place for fishery production in thought, there are no personnel in the organization, there is no room in the plans, there are no means in the supplies." This situation must be changed. To develop fishery, the problem of understanding must first be solved well. Then, we must grasp management to establish various forms of production responsibility system in fishery. This is the key to mobilizing the people's enthusiasm. After this work is grasped well, the yield of the present water surface for raising fish can be increased on a large scale. The fishery group of Juhe reservoir at Lingfen implemented contracts for specialized service and financial affairs this year. In half a year, nearly 40,000 jin of mature fish were caught and the whole year's task was completed in half a year. Huanglong Brigade in Yongji County contracted 13 mu of water surface to two young women, and their salary was calculated on the basis of the yield: full yield was to be rewarded and losses to be totally repayed; the quota for the yield was set at 1950 jin of fish, and the actual yield was 2100 jin. If every locality could do this, the fishery yield could be increased greatly. Now, in most localities, the responsibility system has not yet been established for fishery production, or there are no people in charge, or the localities are still "eating from the big pot." This situation must be quickly changed.

9296
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BRIGADE'S SUCCESS IN HANDLING PRIVATE PLOTS DESCRIBED

High Income

Taiyuan SHANXI RIBAO in Chinese 13 Aug 81 p 1

[Article by Li Pingshe [2621 1627 4357] and Li Suojiang [2621 6956 3068]: "Wangcun Brigade's Private Plots Produce an Average Per Mu Income of Over 500 Yuan; The Main Experience is: Each Commune Member Family Shows Its Skills, The Production Teams Provide Enthusiastic Support, Market Information Is Provided In Time to Help Create Sales for Products"]

[Text] Last year, the average per mu income from private plots of the more than 500 families of the Wangcun Brigade in Yangzheng County reached over 500 yuan. Among them, the per mu income from private plots of 57 commune member families was over 1,000 yuan, and there were 8 families producing over 2,000 yuan.

The high income from the private plots of Wangcun was mainly the result of each commune member family practicing its skills and careful planting, and at the same time, the brigade and the production team provided enthusiastic support so that the commune members could plant their private plots well; the brigades and teams told them about the market situation, sought sales opportunities and assured sales.

The private plots of Wangcun Brigade are mostly planted with young mulberry trees, tobacco plants, red and white radishes. These products have a high economic value: 1 mu of mulberry seedlings can be cultivated into 70,000 to 80,000 trees, each tree sells for 3 fen (sometimes even more), providing a total of over 2,000 yuan. The products of private plots are mostly commercial products used for barter. They are sold within the commune, within the county, and some products are also sold as far away as the Shangdang Basin, the suburbs of Taiyuan and the Jinnan Plain.

To help commune members develop the production of commercial products in private plots, the Wangcun Brigade provided all kinds of conveniences to commune members. The commune members were allowed to fertilize their plots using such farm manure as pig manure and shack manure at will. The brigade established the responsibility system of investment in fertilizers and the method of giving good prices for superior quality goods and rewarding surplus production to encourage commune members to accumulate more fertilizers and to provide more fertilizers to the collective. The brigade bought chemical fertilizers on behalf of the commune members: whatever amount the commune members needed, the brigade satisfied. Irrigation was uniformly

arranged by the brigade and the production team. Cadres of the production teams regarded private plots and the land of the collective as the same. When the land of the collective was irrigated once, the private plots were also irrigated once. Some production teams also dispatched special personnel to irrigate private plots of commune members. The private plots of some teams were semiwatered land, irrigation could not be assured. So the team used water pumps to bring water from the river and to use all means to irrigate the plots of the commune members.

In developing production of commercial products, the market situation is a big problem. But the farmers seldom leave their homes during the year and it is not easy for them to obtain market information. Cadres of the brigade used their frequent trips to conferences, inspection tours, study away from home and business trips to gather and analyze market information. They returned and introduced to the commune members information as to what products were accumulating, what products were hot items, what should be produced more and what should be produced less.

The cadres of Wangcun said that calling upon everyone to plant must be accompanied by assuring that the products can be sold. Last year, they called for the planting of mulberry seedlings. Some commune members refused to plant them. These commune members saw that mulberry seedlings were not selling well in Yangcheng and were afraid that they could not be sold after autumn. The cadres explained to the commune members that they should not look at the problem only within one county. The entire province was in need of mulberry seedlings, and selling mulberry seedlings was also rewarded by the higher authorities. The cadres also told the commune members that it the mulberry seedlings of a commune member family were not sold, the brigade would buy them at 3 fen per plant. In this way, the people's anxiety was calmed. After autumn, the cadres of the brigade bought the mulberry seedlings of each family and uniformly sold the seedlings elsewhere.

Last year, the mulberry seedlings produced by the private plots of Wangcun earned a lot of money. This year, there are more families planting mulberry seedlings. Some members thought that after a few years, the demand for mulberry seedlings would drop, so the income of the private plots of Wangcun would drop. The cadres of Wangcun said: No. They believe regardless of what time, the market will always have a shortage of some products, so as long as we conscientiously study the market situation, the income will increase, and when mulberry seedlings cannot be sold, they will take up other products not commonly produced.

Promotion of Private Plots

Taiyuan SHANXI RIBAO in Chinese 13 Aug 81 p 1

[Article by staff commentator: "Private Plots Must Be Sufficient and Must Be Planted Well--Eighth Article On Actively Developing Diversification in Farm Villages"]

[Text] The Central Committee of the Chinese Communist Party and the State Council in the notice on developing diversification in farm villages pointed out that measures must be suited to local circumstances, private plots and fields of feed crops must be appropriately expanded, the area of the two can be as large as 15 percent of the total area of cultivated land of the production team. This is an important policy regulation to mobilize the individual enthusiasm of the commune members and to develop diversification in farm villages in a big way.

Practice proves that private plots can help people solve the deficiency of food grain rations and tide them over during disasters. They have become the bases for commune members to engage in diversification, to develop production of commercial products and to increase the productive value of agriculture. Because commune members manage the plots well, the productive values of private plots in many localities are several times, a dozen times and even several dozen times the productive values of the collective land. The per mu income from private plots of Wangcun Brigade in Yangcheng County has surpassed 500 yuan. Our province has a total area of over 58.12 million mu of cultivated land; if we take out 15 percent of the land for private plots, we will have over 8.82 million mu; if each mu produces an income of 300 yuan, this amounts to over 2.6 billion yuan, equivalent to 68.5 percent of the total productive value of agriculture of the entire province. This is a large income.

Because private plots have such a great potential and can produce such large economic income, cadres of each level should act firmly in accordance with polity and regulations and give commune members private plots. Now, in Luliang and Yanbei prefectures, the area of private plots has reached about 15 percent of the total area of cultivated land, and other regions are taking measures to actively implement this policy. But some comrades still refuse to act. They worry that expanding private plots will affect collective production and the solidarity of the collective economy. This worry is unnecessary. Now, every locality has popularly established the responsibility system of accounting for salary in joint production. This serves to assure that collective production will be managed well. The conflicts between private plots and collective land can be completely solved as long as they are uniformly managed and considered together and rationally arranged.

The cadres must be responsible for planting collective land well, and the cadres are also responsible if private plots are not planted well. The private plots of commune members of Wangcun Brigade could achieve 500 yuan of income per mu because of the efforts of the commune members themselves and of the brigades, which helped to understand the market situation and solve the problems of opportunities and sales on the one hand and on the other hand to solve the problems of fertilizers and water conservancy in the production process. As the income from private plots increased, the cadres also shared in the glory. Therefore, comrades working in our farm villages must all learn the ways of Wangcun Brigade to give commune members private plots without reservation and not give out bad land. After the land is appropriated to the commune members, they must be helped to plant the land well. When the private plot, the private person and trading in the collective market are fitted together, diversification in farm villages will be able to develop greatly and the income of commune members will be able to increase rapidly. Therefore, we must go all the way in developing private plots.

9296
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WAYS OF INCREASING DRYLAND YEILDS DISCUSSED

Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 8, Aug 81 pp 5-7

[Article by Zhang Jingyuan [1728 4842 0337], Yang Baoquan [2799 1405 5425], and Wang Tingyan [3769 1694 1750]: "Adoption of Comprehensive Technical Measures To Develop Dryland Agricultural Production"]

[Text] Shanxi Province, located in the mid-reaches of the Yellow River and on the eastern edge of the loess highlands, is an inland semi-arid area. Of the province's almost 60 million mu of cultivated land, three-fourths is drylands. Owing to the limitations of water resources, for the present and for a fairly long time in the foreseeable future, no substantial increase in the irrigated area can be achieved. Drylands will continue to occupy a fairly important position in agricultural production. Establishment of a drylands agriculture guiding mentality, strengthening of research and application of dryland farming and cultivation techniques, and increase in dryland agriculture production levels, are long term strategic measures for hastening the development of agricultural production and for the modernization of agriculture in Shanxi Province.

The key to consistent output increases from dryland agriculture lies in tapping of rainfall, accumulation of soil moisture, reducing evaporation, and the adoption of comprehensive technical measures.

First is mastery over the laws of motion of soil moisture, reliance on cultivation to regulate storage of moisture, and satisfying crop moisture requirements to the maximum extent possible.

Shanxi's natural climatic characteristics determining cyclical laws of seasonal change in the movement of soil moisture. Most important are: (1) The rainy season of July, August, and September during which more than 70 percent of total annual precipitation is concentrated. This is the period of the year when soil moisture is greatly replenished and collected. The copious rainfall of this period not only satisfies the water needs of crops during that time and the expenditure of moisture through normal evaporation, but a substantial amount of water replenishes moisture in lower layers of the soil, and replenishes deep underground water strata. Calculations made from experimental data show that timely raking of fallow wheatfields and cultivating between rows of crops to be harvested in fall can conserve more than 200 milimeters of precipitation, which is to say a saving of 130 cubic meters per mu of cultivated land. (2) During the autumn season of harvesting, plowing,

and sowing, as a result of the replenishment provided by precipitation and the conservation of moisture during summer and autumn, the surface layer of soil and the water content of deep layers is generally fairly ample. But, temperatures tend to be high during this time, and the amount of precipitation gradually diminishes; moreover, because the fields are bare following the autumn harvest, loss of moisture is very easy. Attention to soil preparation for autumn cultivation can assure fairly good soil moisture before planting both before and after the new year. (3) In the winter season, temperatures drop, and the cultivated layer freezes. Soil moisture suffers the effects of the temperature difference gradient. Moisture from the lower levels moves upward, and is diffused in a gaseous state in cracks in the frozen layer, and it freezes into ice crystals. With the addition of natural snowfall as well, soil moisture in the surface layer of soil is farily well replenished and collected, becoming the principal reason for early spring running of sap, and the major target for conservation of soil moisture in early spring. (4) With the arrival of spring, temperatures mount once again; the soil thaws; and the period when the sap begins to flow occurs. During this period moisture in the surface of the soil is farily good, and attention to its conservation can provide conditions for the greening up of the wheat and for spring sowing. However, because of the paucity of spring rains and the numerous and strong windstorms, moisture is lost rapidly. An analysis of meteorological data shows the quantity of precipitation during February, March, and April to be only 9.6 percent of total annual precipitation, while the quantity of evaporation is 21 percent of the annual total.

On the basis of the aforestated laws of changes in movement of soil moisture, water collection and moisture conservation work on drylands in Shanxi Province should emphasize summer and autumn plowing and raking, and harrowing in icy conditions in the spring so as to put the rains of summer to use in spring, to collect autumn moisture to stave off spring drought, and to conserve spring soil moisture to relieve drought during spring planting. Shanxi Province already possesses a great amount of successful experience in this regard, and these things are easy to do. By adapting general methods to local situations, being extremely diligent, and persevering without let up, great accomplishments can be made. According to measurements made at Dongguangzhuang Brigade in Wenxi County, use of summer cultivation to use rainfall, so tht "summer rains find use in spring" in the farming of wheatlands, showed a 53 millimeter increase in quantity of water stored in the 0 - 200 millimeter layer of soil as compared with the old farming methods used for wheatlands. Dryland millet fields in the Jinzhuang Brigade of Huguan County were deeply plowed and vigorously turned over in fall to collect moisture, and cultivated for "three moistures" in the spring to conserve soil moisture. During the serious spring drought of 1965, the moisture content of the cultivated layer of soil just before the time of sowing was 4.2 percent higher than in a control field; the sprouting rate was 20 percent higher, and there were very few cases where the seedlings did not come up or where the soil was cracked around seedlings.

Second, continued capital construction of farmlands to increase dryland ability to resist calamities and produce increased yields.

Most of the drylands in Shanxi Province are located in mountain regions, in hilly areas, and in ravines where serious erosion has been a direct reason for soil infertility and drought. It is calculated that the amount of silt annually carried into the Yellow River and the Hai River throughout the province amounts to 460 million tons, equivalent to the erosion of more than 200,000 tons of nitrogen. Consequently, renovation of the soil, construction of terraced fields, preservation of water and

soil, and a build up of soil fertility are major measures for winning the initiative in dryland agriculture. Measurements made at Wangjiagou Brigade in Lishi County following construction of terraced fields showed virtual control of erosion on slopes, and the quantity of flow and quantity of silt transported in ravines was reduced by 26 percent and 78 percent respectively.

Since the founding of the People's Republic, a great amount of capital construction work has been done on farmlands in the vast dryland areas of Shanxi Province. Newly built terraced fields and flatlands created by the damming of ravines amounts to almost 10 million mu. More than 2 million mu of saline-alkaline lands have been improved; reservoirs have been built as have cisterns and ponds, and afforestation and the planting of grass has been done to control erosion on an area of erosion. However, in carrying out capital construction of farmlands, there have been problems and mistakes involving formalism, arbitrary uniformity, and of egalitarianism and indiscriminate transfer of resources. In future capital construction of farmlands, there definitely must be an adaptation of general methods to local situations, a striving for results, attention to government policies, and action within the limits of ones capabilities.

Capital construction of farmlands is not just repairing and building, leveling fields and preparing the soil, but also actively nurturing soil fertility. Without gradual increase in soil fertility, any thought of increased yields every season or every year will be unattainable. Experience has shown that in dryland agriculture, the two conditions of water and fertility are mutually restrictive and mutually supportive.

In dryland fields that are fertile and where water collection and soil moisture preservation capabilities are fairly strong, the water utilization rate will also be fairly high. Research data collected by the Water and Soil Preservation Institute of the Chinese Academy of Sciences during 1974 and 1975 at the Niancun Brigade in Chengcheng County, Shaanxi Province and at the Dafujie Brigade in Heyang County showed consumption of from 270 to 370 milligrams of water on wheatfield plots with yields of from 200 to 300 jin per mu, or a bout 0.8 jin of wheat for every millimeter of precipitation. Production of 400 jin of wheat per mu consumed 340 - 350 millimeters of water, each millimeter of rainfall producing between 1.1 and 1.2 jin of wheat. For the production of between 500 and 600 jin of wheat per mu, water consumption was between 360 and 390 millimeters, or 1.3 to 1.6 jin for every millimeter of precipitation. Yields of 800 jin per mu consumed 450 millimeters of water, or 1.8 jin for every millimeter of rainfall consumed. This shows that the utilization rate of water increases strikingly with increase in soil fertility. Therefore, in undertaking the capital construction of farmland, it is definitely necessary to follow up closely with increasing the fertility of the soil and, in accordance with the situation in each place, to open up fertilizer sources, increase applications of fertilizer, grow green manure, and do rotational cropping so as to improve both the structure and the chemical and physical properties of the soil, using every means possible to increase the organic content of the soil in drylands.

Selection and breeding of crop varieties resistant to drought that produce bumper harvests to meet the environmental conditions of dryland farming.

Because of these different biological properties, different crops and different crop varieties differ greatly in their ability to resist drought or tolerate drought. Gaoliang, millet and broom millet, for example, show strong tolerance of drought during the early stages of their growth, and are suitable for growing in the fairly

arid conditions of the spring season. Winter wheat, Hanxuan No 10, was planted at the Xinfeng Brigade in Fenyang County where water was lacking for people and livestock alike, and for the 7 year period from 1973 to 1979, it produced yields averaging more thn 300 jin per mu. It possesses a high resistance to drought and consistent mu per yield characteristics. The problem now is neglect of natural climatic conditions in deciding which crops to plant, giving emphasis solely to the planting of corn for high yields, thereby squeezing out some millet, naked oats, ramie, and such drought tolerant crops. In the breeding of crops, sole emphasis is on selection of high yield varieties tolerant of water and fertilizer to the neglect of superior varieties tolerant of drought and tolerant of infertility that are suited to cultivation on large dryland areas whre the soil is fairly poor. In the case of winter wheat varieties, for example, of the 19 superior winter wheat varieties approved by Shanxi Province, only 5 are dryland varieties, and varieties that can be grown on either wetlands or drylands number only three. This far from meets the needs of production. Therefore, selection of drought-tolerant crops and breeding of bumper crop varieties resistant to drought is also a major measure and an urgent task for dryland agriculture.

Fourth, active launching of experimental research in modern agricultural techniques, and promotion of their use; readjustment and improvement in the environmental conditions of water, fertility, air, and heat to improve dryland yield levels.

Some countries with fairly advanced agriculture use advanced agricultural techniques of reduced cultivation methods, no cultivation methods, spray irrigation, drip irrigation, culturing of crops under plastic sheeting, and use of weed-killers, which have played an active promotional role in agricultural production in areas of severe aridity, and erosion by wind and water. Reports from foreign countries tell of the loss of 2 tons of soil per hectare in growing corn on silty loam on a 9 percent slope using the method of no cultivation, while with ordinary cultivation methods, the soil loss is 20.5 tons. Experimental measurements made by national and provincial water conservancy research units show that use of spray irrigation techniques effects a more than 20 percent saving in water over the ditch irrigation method, and in sandy porous soil the saving may be between 60 and 70 percent. Moreover, spray irrigation places low demands on soil surface flatness; it can increase the humidity in the air, regulate the macroclimate of fields, and effectively prevent damage from hot dry winds and frost freezes. Culturing of plants using plastic sheeting is a new technique that has developed during recent years. Experiments conducted between 1976 and 1980 by the Cotton Institute of the Provincial Academy of Agricultural Sciences have demonstrated that the growing of cotton under plastic sheeting covering the ground can raise soil temperature, reduce the evaporation of water content, improve the physical and chemical character of the soil, promote cotton plant metabolistic functions, and increase yields by about 30 percent.

This shows that by combining the dissemination of traditional dryland farming techniques with active development of experimental research in modern agricultural techniques and their promotion for use, broader avenues and vistas for the development of dryland agriculture will be opened.

Fifth, accelerated afforestation and grass planting to increase the vegetation cover rate and create fine ecological environmental conditions for dryland agriculture.

Looked at in long range terms, agricultural production must possess a fine farmland ecological system. In Shanxi Province, more than 80 percent of the area is mountainous or semi-mountainous. As a result of the successive depredations of war and the ceaseless clearing of land for agriculture, destruction of forest and grass resources has been extremely serious, creating bald hills and barren mountain ranges, soil erosion, the encroachment of windblown sand, and the intensification of drought, wind, hailstone, and flood disasters. Currently the forest cover rate for the province is only 10 percent, and this is distributed extremely unevenly, and a serious ecological imbalance continues to exist.

Large scale afforestation and planting of grass is a major undertaking for the improvement of nature with benefits for the present generation, and creation of prosperity for posterity. It plays a major role in the regulation of the climate, impeding winds and fixing sands, in conserving water and soil, in promoting the normal moisture cycle, in avoiding or ameliorating natural disasters, and in purifying the environment. In terms of dryland agriculture, in particular, in a definite sense the creation of forest is the creation of water and the creation of soil moisture. In 1952, Xia County began the planting of trees in the four besides [beside roads, beside streams, beside fields, and beside houses], creating a forest network on 400,000 mu of cultivated flat land, the afforestation rate increasing from 6 to 25 percent. According to measurements taken by forestry research units, within the forest network control area, wind speeds decreased by 53.3 percent; summer temperatures dropped by 1.4°C; the amount of evaporation decreased by 38 percent; transpiration intensity fell by 18 percent; and relative humidity increased by 11 percent. During the period of hot dry winds, the high heat damage time within the forest network was decreased by 1.4 hours, and the low temperatures damage time was shortened by 5 hours. Wheat output rose by 22 percent.

The growing of pasture grass likewise serves the good purpose of improving the ecological environment. Measurements made at the Tianshui Water and Soil Conservation Experimental Station in Gansu Province show that when alfalfa was grown on slopes, the amount of runoff and the amount of scouring was reduced by 69 and 91 percent respectively as compared with cultivation of the slope. On slopes on which sweet clover was grown, there was a 65 and 69 percent reduction as compared with cultivated slopes, both approaching the performance in retention of forested land. The Shaban Brigade in Hequ Country planted ningtiao [2899 2742] on 8,000 mu of sandy soil, in a 167 square network. Within 3 years the shifting sands were brought under control and 3,000 mu of cultivated land protected.

To summarize the foregoing, afforestation and the planting of grasses are fundamental measures for transforming the ecological environment and creating prosperity throughout the ages. With long range planning, and unflagging perseverance, by the end of this century the province's cover rate can be balanced by more than 20 percent. Ecological environmental conditons will then show remarkable improvement, and fairly rapid development of dryland agriculture will be attained.

9432
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CHARACTERISTICS OF TWO TYPES OF MULTI-EAR CORN EXPLAINED

Taiyuan SHANXI NONGYE KEXUE in Chinese 7 Jul 81 p 16

Article By Zhan Qin [6124 0530] and Zhao Yulian [6392 3768 5571], Crop Genetics Institute, Provincial Academy of Sciences: "Research on Several Characteristics of Multi-Ear Corn"]

[Text] There are two kinds of multi-ear corn, several ears on a single stalk and several ears on tillers. Some breeders believe that the breeding of multi-ear corn is a new departure. In order to hasten the breeding process, we began research in 1979 on multi-ear corn, the preliminary results of which are provided below.

1. Relationship between number of tillers from a single corn stalk and number of ears per single stalk. The number of tillers per stalk and the number of ears have a remarkably direct relationship. The greater the number of tillers from a single plant, the greater the number of ears formed. No matter the number of tillers from a single stalk, the number of ears on the main stalk are virtually identical, being from 2.2 to 2.5. Moreover, the number of ears per tiller increases with the number of tillers per stalk, the relative coefficient being $r = 0.96$.

2. Relationship among main stalk and tiller heights, numbers of tillers from the main stalk, and number of ears. Observation data shows that the taller the main stalk as compared with tillers, the fewer the number of tillers on a single stalk, and the fewer the number of ears on a single stalk. It was also observed that when the height of the main cornstalk and the average height of tillers was generally the same or even a little lower than the tillers, the greater the number of tillers from a single stalk, the greater the average number of ears. This is a major indicator of corn that tillers to form multiple ears.

3. Relationship between number of ears per stalk on multiple ear corn and the number of tassel branches. Analysis of the results of 2 years of observations shows that the greater the number of ears formed on a single stalk of multi-ear corn, the greater the number of branches of tassels. If a single stalk forms 1 ear, the number of branches of the tassel is 12 to 14, for an average 13.2. When a single stalk forms 2 ears, the number of tassel branches is 14.9 to 17, for an average 15.6. When a single stalk forms 3 to 5 ears, the tassel branches number 16 to 19, for an average 17.1. The number of tassel branches on corn that produces multiple ears through tillering also increases as tillering increases.

4. Relationship between number of ears per individual stalk and height of ear location. The number of ears per individual corn stalk form a negative relationship with the height of the ear position. The greater the number of ears on a single stalk, the lower the position on the stalk of the ear in the lowest position. This pattern may be related to strength or weakness of an apical heterosis in corn.

5. Relationship between earliness of silk formation by ears on the same stalk of multi-ear corn and ear characteristics. The nearer the silk formation period by ears on the same stalk of multi-ear corn, the more the spikes formed per stalk, the longer the ears, the thicker the ears, and the less the variation in weight of grains from the ears. If the average difference in length between ears one and two that put forth silk at the same time is only 1.67 millimeters, the average difference in weight of grains from the ears is 21 grams. Ears that put out silk a day apart with an average difference in ear length of 4.6 millimeters have an average difference in weight of grains from the ears of 44.9 grams. This is a major indicative characteristic in the selection of single stalk multi-ear corn.

9432
CSO: 4007/8

SCIENTIFIC RESEARCH PRODUCES NEW WATER CONSERVANCY METHODS

Taiyuan SHANXI RIBAO in Chinese 12 Aug 81 p 1

[Article by Lu Maochun [4151 5399 2504]: "Our Province's Water Conservancy System Realizes a Number of Scientific Research Achievements"]

[Text] Since the national science conference, our province's water conservancy system has realized a number of new achievements in scientific research.

The hydraulic filling technique is a new achievement completed in coordination by concerned units of Shaanxi and Shanxi provinces. It has shown its superiority in construction of farmland water conservancy and water and soil retention in our province. For example, compared to the rolling and compacting method in building reservoirs and dams, this method eliminates the four procedures of loading earth, shipping earth, unloading earth and rolling and compacting, increasing work efficiency three to six times, and it has been popularized in over 50 counties (cities), over 300 communes and over 2,500 brigades in our province. The experiments in the well sinking techniques of using wind in place of water and drilling wells without the use of water have been popularized and used in the counties of Yuci, Pingding, Yuanping, Pinglu, and they have been welcomed by the masses in the mountain regions. The movable thin walled aluminum tubes and quick joints of the sprinkler irrigation system successfully developed by our province are lightweight, convenient to move about, convenient to dismantle and assemble, rust proof, their useful life is long, and they form a sprinkler irrigation system that has a future for development. The new technique of compound nylon coating and the test manufacturing of underground mortar tubes all have a high utility value. Liangziguan and other regions have successfully cultivated the African carp on a trial basis. This has opened up a new way for developing our province's fishery production by fully utilizing surplus heat from factories and hot spring water.

9296
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TAIYUAN SUCCESSFULLY DEVELOPS SPRINKLER IRRIGATION SYSTEM

Taiyuan SHANXI RIBAO in Chinese 12 Aug 81 p 1

[Article by Liu Mengyan [0491 1125 3601]: "Suiting Measures to Local Circumstances in Developing Water Conservancy Construction--The Results of Development of Sprinkler Irrigation in Taiyuan City Are Remarkable"]

[Text] Taiyuan city suited measures to local circumstances in developing water conservancy construction, and over 3 years it developed 60,000 mu of sprinkler irrigation.

Sprinkler irrigation is an advanced water conservancy technique. In 1978, the Taiyuan city committee summarized the past experience and lesson of sprinkler irrigation and decided to concentrate forces to do the easy and then the difficult tasks and followed the guideline of constructing irrigation systems over expanses to develop sprinkler irrigation in hilly and mountain regions in a big way. In April of that year, a test site of 1,000 mu of sprinkler irrigation was established at the Wangjiafeng Brigade of Haozhuan Commune in the southern suburb first and it was later gradually popularized. In 1979, the whole city developed 30,000 mu of sprinkler irrigation. Sprinkler irrigation stimulated large scale increases in yield and encouraged the masses in the mountain regions to build water conservancy projects. Up to the present, the whole city has developed a total of 105 localities for sprinkler irrigation covering 60,000 mu.

The results of developing sprinkler irrigation in Taiyuan city is remarkable. The work has been praised by the Water Conservancy Ministry, and 13 provinces and cities throughout the nation have sent delegates to inspect the work. The investment per mu was 150 yuan, lower than the national average of 280 yuan. The increased yield due to sprinkler irrigation was over 40 percent in the hilly and mountain regions and over 30 percent in the plains.

9296
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TAIYUAN AREA HAS BUMPER HARVEST OF WHEAT

Taiyuan SHANXI RIBAO in Chinese 12 Aug 81 p 1

[Article by Sha Zequan [3097 3419 3123]: "Good Policy, People Work Hard, Reliance on Science, Weather Helps Out--Taiyuan City's Wheat Production Increases By More Than 30 Percent"]

[Text] This year, Taiyuan city produced a bumper harvest of wheat. The total yield of the 263,000 mu of wheat throughout the city (the area was 7 percent less than that of last year) reached 95.54 million jin, an increase of 36 percent.

The main reasons for Taiyuan city's bumper harvest of wheat were: good policy, the people worked hard, reliance on science, and the weather helped out. Since last year, communes and brigades in each county and brigade further implemented the various economic policies of the party, especially in strengthening and perfecting the various forms of production responsibility system, and the enthusiasm of the commune members in production was mobilized. At the same time, each county and ward placed a lot of emphasis on scientific planting of wheat, each level established plans for wheat production techniques, and trained technical personnel and advanced production techniques, and trained technical personnel and advanced production techniques were popularized. Although the Taiyuan area had less rain this year, the rainfall was timely and this created favorable conditions for wheat to produce increased yields. After the bumper harvest, the broad ranks of commune members enthusiastically submitted wheat for sale to the state, and the whole city's procurement task was completed early and with a surplus.

9296
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SCIENTIFIC CULTIVATION OF WHEAT PROVIDES INCREASED YIELDS

Taiyuan SHANXI RIBAO in Chinese 14 Aug 81 p 1

[Article by Du Taishan [2629 1132 1472]: "Our Province Realizes Achievements in Scientific Research in 'Three Izations' of Wheat"]

[Text] The provincial scientific committee has conscientiously implemented the guideline on combining scientific research and production and has realized welcome achievements in the study of the cultivation techniques of standardization, localization and establishing indicators for wheat.

In the past, most scientific and technical achievements in agriculture were in breeding; the techniques of cultivation were still a very weak link. Because superior varieties and superior methods were not matched, in production, frequently the yield was high but the cost was also high and low yields were also accompanied by high costs. To change this situation, the provincial scientific committee has organized concerned units since the winter of 1979 to study the coordination of the "three izations" of wheat in the Yuncheng wheat region. The three major patterns of panicle differentiation, tillering and panicle formation and filling of seed grains of the major varieties of wheat of that region, the physiological and ecological indicators of wheat at different levels of yield, indicators for management of seedlings by observation and indicators of the cost structure were systematically studied, and demonstration of cultivation by the "three izations" of wheat was conducted. According to statistics, the average per mu yield of the 164,600 mu of wheat cultivated by the techniques of the "three izations" popularized was 442 jin, an increase of about 20 jin over previous yields.

9296
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NOTICE ISSUED ON DEVELOPING DIVERSIFICATION IN RURAL AREAS

Hangzhou ZHEJIANG RIBAO 8 Aug 81 pp 1, 3

[Article: "Zhejiang Province Committee of the Chinese Communist Party and the Zhejiang Provincial People's Government Recently Issued a Notice and Made 10 Proposals Concerning the Problems of Developing Diversification in Farm Villages. The Notice Asks the Party Committee and the Government at Each Level to Include the Development of Diversification in Farm Villages as an Important Task in the Daily Schedule and Concretely Strengthen Leadership. Each Department Must Support Diversification in Farm Villages in a Big Way. All Unreasonable Restrictions and Bad Workstyles That Hinder the Development of Diversification Should Be Corrected With Determination."]

[Text] The Zhejiang Province Committee of the Chinese Communist Party and the provincial people's government recently issued a notice concerning several problems in the development of diversification in farm villages and made 10 proposals concerning the State Council's directive on actively developing diversification in farm villages.

The notice said that since March of this year, when the Central Committee issued this document, the party organization and government at each level throughout the entire province have organized cadres and masses to conscientiously learn it and have begun investigation and study, summarized experience, established plans, carried out forceful measures, and promoted the development of diversification in farm villages. While each locality implemented the document of the Central Committee, some questions were also brought out, including questions about understanding and policy which need to be answered and given a ruling. For this, the provincial committee and the provincial government called upon the responsible persons of the departments of agriculture, industry, planning, commerce, supply and marketing, finance, banking and commodity prices to discuss several major questions and present their opinions.

I. Developing diversification is a strategic measure in making the farm village economy prosper. We must exert more big efforts in this regard.

Practice proves that to strengthen and develop the collective economy and to make the farmers become rich as quickly as possible, we must carry out diversification and comprehensive development. In 1980, the entire province had an average of 590 brigades with an average per capita collective distributed income of over 300 yuan. In these brigades, only 21 percent engaged mainly in the production of food grains, and most were in places where the average per capita area of cultivated land was

large and the unit area yield was high. The remaining 79 percent of the brigades became rich by relying on the development of economic crops, specialty products of the mountains and forests, fishery production and commune and brigade enterprises and such diversified undertakings. In Zhejiang, if our eyes are fixed on the limited food grain fields and if we do not open up other ways to develop diversification, it will not be possible for the farm villages to become rich.

In recent years, especially since the Third Plenum of the Chinese Communist Party, each locality throughout the province has conscientiously implemented various economic policies, food grain production and diversification have mutually promoted each other, and they have developed prosperously. A comparison of 1980 and 1976 shows that the total production value of agriculture increased 46.2 percent, the production value of food grains increased 20.9 percent, and the production value of diversification increased 64.1 percent. At present, the ratio of production values of food grains and diversification is 40 percent to 60 percent. If we add the production value of the commune and brigade enterprises, the proportion of diversification is even greater. The development of diversification has gradually made the internal economic structure of agriculture more rational and has also promoted the development of light textile industry, improved the supply of commercial products in towns and villages and supported foreign trade exports. But because of the "leftist" influence which lasted for a long period, many comrades still have not completely eliminated their old ideological frame of mind, the hindrance to the development of diversification has not been completely eliminated, and the hands and feet have not been completely freed. There are still many items for production in the plains, the mountain regions and along the coast which can be developed but have not been developed. There are large areas of mountain land, hilly regions, water surfaces, coastal land, and banks of rivers which have not been fully developed and utilized. The amount of production of many traditional specialty products has not reached the best level in history. A large amount of surplus labor in farm villages has not found appropriate outlet. We must use the spirit of the documents of the Central Committee to further unify the understanding of the cadres and the masses, and to further grasp diversification with the same enthusiasm as food grain production is grasped.

II. Liberate ideology, open up thinking, overcome the narrow viewpoint of "singular business," establish the viewpoints of macroagriculture and macroscopic food grains, carry out overall development of the farm village economy.

For a long time, unilateral tendencies and subjectivism existed in our guidance of agricultural production. We frequently believed that grasping agriculture was grasping food grains, that grasping food grains was grasping paddy rice, that grasping forestry was grasping China fir, that grasping livestock production was grasping hog raising, neglecting and even squeezing out diversification, causing the internal ratios of agriculture to become unbalanced. The facts of world agricultural developments and our own practice both prove that the traditional concepts of agriculture and food grains no longer conform to the new situation. The planting industry is mainly involved with agriculture, but it cannot be limited to planting food grains, and food grains cannot be limited to paddy rice and wheat. All kinds of miscellaneous grains, beans, edible oils, sugar, meats, dairy products, aquatic products, melons and fruits, vegetables, and edible fungi should be considered "food grains." The raising industry is an important component of the agricultural economy--not only hogs, cattle and sheep, but also rabbits, fowl, bees, shrimps, crabs, shells, algae. All birds, animals, insects, and fish that have economic value belong to the raising industry.

Overall development of the farm village economy requires that we open up our views. We must not only quickly revive and develop the various traditional production items, but we must also continuously open up new areas of production. We must continue to hold tightly to food grain production and we must utilize the mountains and the seas in a big way. We must develop the planting industry and the raising industry, and we must also actively develop various processing industries, mining, construction, transportation, energy (including small hydroelectric power, small coal kilns, methane gas, solar energy), and feed processing according to plan. We must especially develop weaving and embroidery and similar labor-intensive professions actively. We must develop agriculture, industry and sideline industry, and we must also actively develop repairs of various machinery and electrical equipment, house repairs, sewing, barber shops, bath houses, photography, hotels, restaurants, tea houses, wine shops, hospitals, sports, food markets, movie houses and theaters, and other commercial enterprises and service professions that serve the farm villages and towns. In general, only by opening up the ways for production to let each person practice his skill, utilize all land, develop the full use of each object, and allow merchandise to flow freely, can the opportunities for employment be expanded, the production of commercial products be developed, and the town and village economy become active.

III. Develop the advantages and avoid the shortcomings, develop superiority, suit measures to local circumstances, establish plans for developing diversification.

Because the resources and conditions of each locality are different, because more diversification involves commercial production and is influenced greatly by pricing patterns, in order to strengthen planning and avoid acting blindly, each city, county, commune and brigade must start out from the actual situation to establish plans for the development of diversification, propose the direction for development, and establish the goals, demands and measures that can actually be carried out. In establishing plans for the development of diversification, the following points must be grasped:

1. We must completely and correctly implement the production guideline "never give up food grain production, actively develop diversification." Food grain production is the basis of the national economy and it is also the basis of developing diversification. We must assure that the total yield of food grains increases steadily. Developing diversification requires fully utilizing mountain land, hilly regions, beaches, water surfaces, and food grains must never be squeezed out. Whether in food grains or economic crops, increasing the unit area yields must be emphasized in order to increase the economic results.

2. Surveys of agricultural resources must be strengthened. The party committee and the government at each level organize forces to gradually understand the various resources of the locality so that overall, unified arrangements and rational distribution can be carried out in accordance with the natural resources and the socio-economic conditions of the locality so that the best plan can be proposed for fully developing and utilizing the resources. Each locality, county, commune and brigade must emphasize the development of its own superiority, clearly determine the key projects for development and grasp well several backbone projects and products with a big impact.

3. Economic information and market forecasts must be emphasized. The departments of planning, commerce, supply and marketing, foreign trade and commune and brigade business administration at each level must constantly understand the activities and the needs of domestic and foreign markets and must report to the production units in time so that the principle of using sales to determine production can be followed, so that they can identify those items which can be greatly developed and those items which should be placed under controlled development or whose development should be ended. A lot of attention should also be paid to the quality of the products of diversification, and in particular, famous specialty products must be revived and developed to increase competitive ability.

IV. In leading agricultural production, the two links of strengthening the production responsibility system and developing diversification must be grasped well. In developing diversification, the enthusiasm of both the collective and the individual must be developed.

The two aspects of strengthening the agricultural production responsibility system and developing diversification are closely connected and cannot be separated. Establishing the responsibility system and making it sound must start out from and be based upon developing production. Especially in establishing specialized contracts and the responsibility system of linking wages to production, more ways for production must be widely opened up and diversification must be developed to benefit division of labor and of professions. If the responsibility system is established in isolation and separated from production, then it will not be done well. The development of diversification must be assured by the establishment of various forms of responsibility system. Diversification cannot be developed without appropriate division of labor and of profession and a strict responsibility system, or by "laying back in a big way" and "eating from the big pot."

Diversification involves many aspects, each with its own characteristics, and it has a strong technical nature, so there must be versatility and diversity in determining the form of responsibility system. The general principle is that the enthusiasm of the collective and individual must be developed. That which is suitable for collective and unified management should be collectively managed. That which is suitable for individual and scattered management should be left to individual management.

In developing collective diversification, emphasis should be placed on the production teams in order to fully mobilize their enthusiasm. Items suitable for collective management should mainly be carried out by the production teams. When a production team is unable to manage it alone, production teams can join together to carry it out or the commune and the production team can join to carry it out, or other forms of joint management can be implemented. Business management of mountain forests, expanses of mulberry, tea and oranges and such economic crops now under collective management, gross specialty products and commune and brigade enterprises should be further carried out well through the establishment and making sound of all forms of joint production responsibility system. They must not be broken up at will and distributed to families. Various forms of specialized teams, specialized units, specialized workers must be organized according to the different items of production to be separately contracted to the unit, to the laborer and to the family under the prerequisite of unified management.

While developing collective diversification, individual commune members must be encouraged and supported to develop diversification. As long as the national policy and laws are obeyed, individual commune members should be allowed to work freely. The more proper income from diversification and family sidelines the better, and it should not be limited. All unreasonable prohibitions should be abolished with determination.

The documents of the Central Committee stipulate that localities not contracting production to families can appropriately expand private plots, feeding grounds and zoning of private mountains by suiting measures to local circumstances. The provincial committee and the provincial government believe that the number of private plots and feeding grounds should be suited to the local circumstances. We cannot ask that the tasks of procurement and assigned purchases of food grains and other agricultural products be lessened because of expansion of private plots and feeding grounds and thus reduce agricultural taxes. The actual method should be established by each county according to the actual situation. Waste mountains, water surfaces, beach land and miscellaneous side lots must be uniformly arranged and rationally used. Some can be zoned for individual commune members or managed in partnership.

Under the prerequisite of not destroying natural resources and not destroying the benefits of the collective, individual commune members or partnerships should be actively encouraged and supported to manage raising, collecting, weaving, handicraft, transportation and marketing and services, etc. The various productive professions managed by individuals or partnerships must hang on to the collective economy and submit to the collective a definite amount for public savings. They must not undermine the original commune and brigade enterprises. The communes and brigades and concerned departments must strengthen leadership and management. The individual or partnership enterprises must also be approved by the industrial and commercial administrative and management departments. In the broad number of farm villages, especially in suburban areas and surrounding large and medium-sized plants and mines, key families raising fowl and domesticated animals must be actively developed to provide more sideline foodstuffs. In some new sericulture regions, commune member families must be encouraged to actively cultivate mulberry trees and raise silkworms.

The labor force in the farm village must first assure the needs of collective production. Surplus labor can specialize in managing family sidelines. Surplus labor must also be organized according to plan, and in particular, skilled workers with specialized technical skills should be encouraged to establish businesses. In assigning labor out, contracts must be signed with the collective on shouldering a definite economic task.

Commune members have complete authority over the products of family sidelines except the part which must be sold to the state by regulation. No other unit or individual can interfere. Concerned departments must enthusiastically guide commune members in developing family sidelines and should provide capital, material and technical support.

V. Recruitment of talent should be opened up according to the needs of developing diversification, recruitment should not be formalized, and the talented and capable should be selected.

To change natural resources into social wealth can be realized only by grasping the labor of persons with a definite skill. Therefore, discovering and rationally

utilizing talent are very important. In this sense, without talent, there will not be any business, there will not be any wealth. If attention is not given to the discovery and utilization of talent, then no matter how good or how many natural resources there are, they cannot develop their proper function.

The farm villages in Zhejiang have a rich labor force and there are many talents. "In all of the 360 professions, each profession has its most skillful," and "in the east, south, west and north, there are capable people everywhere." We must determine to change the mistaken ways of "the theory of the unique importance of class origin" and "seizing upon mistakes and shortcomings." We should widely discover and daringly use every kind of talent with a skill to serve the development of diversification and to serve the prosperity of the socialist economy. Those with various specialized talents must first be respected and we must frequently ask for their advice and encourage them to contribute plans and thoughts toward the development of diversification. Second, we must utilize them freely and fully develop their backbone service in business and technology. Those who have both moral standing and talent should be promoted to leading positions in various businesses. Third, a reasonable economic wage must be established according to the standards of their business and technical skills and contributions. The salary for their labor should be higher than the equivalent agricultural labor force. In this way, their enthusiasm can be mobilized and people will be encouraged to learn a skill.

We must develop the function of presently available specialized talent and we must also actively train new specialized talent. At present we have some highly talented people, but they have no successors. We must encourage old teachers to actively take in apprentices in order to teach them their art so that these techniques can be passed on generation after generation.

VI. Various commercial products bases should be built according to plan and various forms of economic joint ventures must be organized.

The departments of agriculture, industry, commerce, supply and marketing and foreign trade, and industrial and mining enterprises must actively join with communes and brigades to carry out important measures to establish raw materials bases and commercial products production bases, and they must also encourage the marketing regions and the production regions to jointly establish commercial products bases. They must also strengthen the economic relationship between industry and agriculture, between agriculture and commerce and between production and marketing, promote various types of economic alliance, improve the results of business, provide more industrial raw materials, increase foreign trade and export products, and improve the supply to towns, villages and cities so that diversification can be developed more according to plan.

Developing commercial products bases requires rational distribution and unified and overall arrangement under the unified leadership of the people's government at each level. The scale of the bases can be large or small and they must not be forced to be uniform. Each concerned department and unit of the province, locality, city and county must separately select appropriate communes and brigades, according to their own needs, to jointly establish construction pland for the bases. The principle of voluntariness and mutual benefit must be followed. The departments and units should provide capital and materials to the communes and brigades which are responsible for production and management. The products of these newly established bases should be under the control of those who manage the bases and not under that of the

departments and units to which they are returned. The actual method of distribution should be decided by negotiation between the two sides of the bases: the products can be proportionally divided, they can be completely sold to the investing department and unit, they can also be handed to one party of the joint venture for processing and the profits can be returned or the profits can be proportionally divided. The two parties of the bases should sign contracts to jointly shoulder the economic responsibilities and the contracts should be validated by the local industrial and commercial administrative departments. The people's government should be resonsible for supervision so that the contracts are legally protected.

The construction of the commercial products bases should be carried out mainly through self-reliance. The state can give necessary support. The manpower, material power and financial power of every aspect must be mobilized and organized to build the various types of commercial products bases well. The province can decide to provide a portion of the capital for production assistance as funds for building commercial products bases and as working capital. The departments of agriculture, industry, commerce, foreign trade, supply and marketing and concerned plants and mines can also provide a portion of the capital to support production. A portion of the mobile funds of each locality, city and county must also be arranged for use in the construction of the bases for diversification.

VII. The channels of flow of products must be opened up and exchange of products must be expanded to further enliven the economy.

The commercial departments must shift their basis to helping the farmers develop diversification. First they must give support to increasing the production of commercial products, then they should actively do the work of procurement and marketing well. In the procurement and marketing of agricultural sideline products, they must be made active, they cannot all wither away, channels must be opened up, obstacles must not be put in the way.

In determining the procurement tasks of agricultural sideline products, "more relaxation is better than tighter control." The economic benefits of the state, the collective and the farmer must all be considered to rationally determine the proportion of procurement and the amount left for the farmers. Since last year, our province has implemented established base amounts for procurement for several years without change covering over 10 types of first and second category agricultural sideline products of tea and silkworm cocoons. Surplus production is proportionally left for the farmers and surplus procurement is rewarded. The results have been good, and implementation of these policies must be continued and kept stable. The communes and brigades and the farmers must be educated to assure that the tasks of uniform procurement and assigned procurement stipulated by the state and the tasks of submitting products for sale to higher authorities as stipulated in the contracts are completed, and the needs of industry and the city people must be actively supported. Under the prerequisite of assuring the completion of the state's procurement tasks, the production units and the farmers have the right to handle the remaining first and second category products on their own (cotton and cotton which includes short cotton velvet is excepted). Processing enterprises for agricultural sideline products can be developed according to plan or the products can be sold on their own. When these products are shipped for marketing, the returned products management department must not hinder their shipment, must issue shipment certificates and should not charge exhorbitant processing fees. Transport departments must

actively arrange for shipment. For third category agricultural sideline products, generally procurement tasks are not assigned to production units. The few varieties of products approved by the provincial government can be divided into a base amount for assigned procurement in key production regions by negotiation between the business department and the production units and by signing contracts, and the rest can be freely procured for marketing. Fiber and starch products from nondomesticated plants and wild life should be actively procured by the concerned business departments, marketed and utilized to change the situation of "yelling for more when there is a shortage and not wanting any when there is plenty." Some products which are not procured by the business departments should be given to the production units and the farmers for sale by themselves.

In the flow of products, the method of allowing a varied composition and many channels should be implemented. Besides sales by concerned departments of the state, as long as national policies, laws and regulations are not violated, the production units and farmers should be allowed to sell them on their own. Communes and brigades can organize joint sales, the products can be commissioned to commercial supply and marketing departments for sale, or small businesses and individual sales persons should be allowed to ship and sell the products. The production units can open showrooms and sales departments in nearby towns to sell the products or the products can be placed under comprehensive businesses of joint agricultural, industrial and commercial enterprises, etc, thus breaking the monopoly frame of mind. All units selling agricultural sideline products should implement the principle of selling more for less profit, advocate direct contact between production and marketing, reduce intermediary links, increase the economic benefits of the producers, and reduce intermediary links, increase the economic benefits of the producers, and reduce the economic burden of the consumers.

Combined procurement and marketing contracts should be actively popularized so as to organically combine the procurement of agricultural sideline products with the supply of industrial products and production data and to coordinate the autonomy of the production teams, the initiative of the farmers and the demands of the state's economic plans.

While enlivening the flow of commercial products, we must strengthen market management so that the market will be lively but not chaotic. Before completion of the task of submitting for sale the first and second category products assigned for unified procurement by the state, the production units must not put the products on the market at will. Besides the returned products management departments, no other department or unit can go to the producing region to make direct procurement. Illegal activities of opportunism, disguised procurement of products, raising prices and interfering with the market must be strictly dealt with. The leader must attacked and punished by law.

VIII. Some necessary measures in tax collection, credit and loans and prices must be carried out to promote the development of diversification.

Tax collection in farm villages should follow concerned regulations issued by the State Council and combined with the actual situation of our province and should be within our province's authority. Recently, the provincial tax department has relaxed tax collection policies for certain items. For example, small hydroelectric power plants and small coal kilns operated by communes are exempt from industrial and bus-

iness taxes and industrial and commercial income taxes. Besides such products as tobacco, wine, sugar, cotton yarn, watches and incinerated [sic] products which have a high tax rate as produced by the commune and brigade enterprises, production of other products which are stipulated as difficult to be taxed can be exempt from industrial and commercial taxation, or industrial and commercial taxes on such production can be reduced for specific periods after it is reported to the regional administrative offices (municipal people's government) for review and approval. Taxation of newly established commune and brigade enterprises earning more profits which are the carrying poles of industrial and commercial income tax collection can be relaxed by increasing the taxable profit from over 50,000 yuan to over 100,000 yuan, etc. These regulations promote the development of diversification. Each locality must conscientiously implement them. Production units should actively complete the state's task of tax collection.

Credit and loans in farm villages must continue to actively support the development of diversification. Credit and loans to commune and brigade enterprises should differentiate between different situations and should be guided according to separate classifications and the superior applicants should be selected to be given support. Besides doing the work of providing loans to presently existing commune and brigade enterprises as working capital, assistance should also be given in the form of loans for capital construction and equipment of newly established enterprises that have good conditions and that are located in areas where there are fewer commune and brigade enterprises at present. Commune members who have difficulty obtaining capital to develop family sidelines should also be given loans under all possibilities.

Prices must be kept stable. Under this prerequisite, and with a view to benefiting production and enlivening the economy, the prices of some products should not be overcontrolled. The fixed supplies of agricultural sideline products to cities must have stable prices. Products not included in the fixed supplies should be allowed to have a floating price. The portion of first and second category agricultural sideline products uniformly procured and procured on assignment must strictly adhere to the prices established by the state. The portion of surplus production distributed proportionally and left for the production teams can have a more flexible price. The prices of third cateogry agricultural sideline products should be even more versatile. Prices of extra products sold by the production units and farmers outside the province according to regulations or extra products for negotiated exchange can be established by negotiation by the two parties, and concerned departments should not interfere.

IX. Scientific research and technical popularization of diversification should be strengthened, unit area yield and economic results should be increased.

Development of diversification also depends on policy and science. Scientific research on superior varieties, cultivation techniques, raising techniques, animal and plant protection and product processing must be actively developed, and the scientific research results must be popularized and applied in production in time. At present, the following few aspects must be brought out and grasped well:

1. We must establish a system for the propagation and popularization of superior varieties, actively improve regional varieties, and introduce some superior varieties according to plan so that products of diversification can achieve a high quality and high yields.

2. We must grasp the feed for domesticated fowl, fish and shrimp as a big task, actively sutdy how to utilize the sideline products of agriculture, livestock production and fishery and wild grown resources, develop compound and mixed feeds and additives, and actively popularize presently existing successful experience in this regard to expand the source of feed and improve efficiency of feed.

3. We must fully develop the function of the presently available agricultural and scientific and technical personnel, use many ways to train various kinds of technical personnel, exert efforts to cultivate a scientific and technical team in diversification, popularize scientific knowledge, and strengthen technical guidance in diversification.

4. We must "invite and send out" and hold agricultural labor model meetings, organize technical teaching delegations to travel to places and provide guidance and to popularize advanced experience.

X. Strengthen leadership, improve the workstyle to adapt to the new situation of the prosperous development of diversification.

The documents of the Central Committee pointed out that the management method to improve the collective economy in farm villages, readjustment of the internal production structure of agriculture, establishment of an agricultural economic system of comprehensive management of agriculture, industry and commerce are all questions of strategic significance in the building of our nation's economy. They are all new questions facing the entire party. The party committee and government at each level must include the development of diversification in farm villages as important business of the daily scheduled, leadership must be concretely strengthened, the new situation must be continuously studied, new problems must be solved and new experience must be accumulated. Each department must regard the task of supporting farm villages to develop diversification as its own important task. Procurement of commercial products, supply of materials, traffic and transportation, finances and tax collection, bank credit and loans, scientific technology, planning and compilation of statistics must all adapt to the new situation emerging after the farm villages establish the production responsibility system and launch diversification. They must all obey and serve the development of production and adapt to and promote the development of production. All unreasonable frames of minds and bad workstyles that hinder the development of diversification should be corrected with determination. The concerned departments at the provincial level must all establish concrete methods and measures in accordance with the spirit of this notice and assign the measures to subordinate units for execution.

9296
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ALL-TIME RECORD RICE YIELDS REPORTED FOR SHAOXING CITY

Hangzhou ZHEJIANG RIBAO in Chinese 24 Aug 81 p 1

[Article by Correspondent Pan Jialin [3382 1467 2651]: "Early Rice Crop Per Unit Yields and Total Output Exceed All-time Highs in Shaoxing City; Specialized Contracting Shows Results; Production in All Industries Takes Off"]

[Text] This year's early rice crop in the rural villages around Shaoxing has yielded an unprecedentedly bumper harvest, both total output and per mu yields exceeding the maximum year of 1979. Diversification has also seen remarkable development. On a visit to a portion of communes and production brigades, the correspondent observed a joyous scene of bumper harvests and heard praise from the people for specialized contracting in a system of responsibility whereby remuneration is linked to output.

According to data provided by the Shaoxing Municipal Farm Committee, early rice crop output for the city this year exceeded the all-time high. Yields were around 900 jin per mu, about 40 jin more than in 1979. Consequently, despite a reduction of more than 7,000 mu in the early rice growing area, total output still rose by more than 17 million jin over 1979, for the highest record since the founding of the People's Republic. One outstanding characteristic of the early rice crop in this city this year was the overall balance of high yields. A large number of production teams that had formerly been fairly laggard in production showed some improvement in their early rice crop production this year, with outputs approaching or catching up with those of advanced theams.

While winning large bumper harvests from the early rice crop, this city's diversification also showed surpassing development. In the tea industry, in particular, as of the present time output has already exceeded last year's total output by more than 18,000 dan. Great increases also took place in diversified growing of jasmine flowers, long haired rabbits, and mushrooms.

Establishment and improvements in the system of responsibility whereby remuneration is linked to output in special contracting, as well as the further implementation in recent years of various economic policies, have provided the motive force in promoting development of production in all industries in Shaoxing. Of special importance has been specialized contracting with the workforce divided into teams, some of less than 10 people and most of more than 10, with remuneration linked to output, convenience in management, direct benefits, and utmost efforts to produce. Xie Desheng [6200 1795 0524], secretary of the Gaobu District Party Committee, told me that 100 dan per mu of nightsoil had to be collected for the early rice crop,

but this amount had not been collected for heaven knows how many years, despite exhortations. This year, however, 118 dan per mu was collected. Year after year no transplanting of the early rice crop after May had also been called for, but this year transplanting was substantially completed throughout the district by 25 May. Because all the major production links had been firmly taken in hand, and with the help of the heavens, the early rice crop moved along smoothly to a bumper harvest.

9432
CSO: 4007/7

BRIEFS

EARLY RICE PROCUREMENT--By 5 September Zhejiang had already surpassed state procurement tasks for early season rice this year. The more than 3.73 billion jin of grain in storage is an increase of more than 1.22 billion jin over that in storage for the corresponding period in 1980. At present the work of storing grain in the major grain producing areas such as Hangzhou, Jiaxing, and Huzhou is still going forward. The output of early rice from more than 16 million mu in Zhejiang this year increased 350 million jin over last year. This year the early rice that the Zhejiang farmers sold to the state consisted of grains that generally were ploump, of a golden yellow color, and of a high quality that has not been approached for many years. Because the moisture content of a considerable portion of the grain throughout the province was low, the grain-set rate was high. The quality of this grain was greatly superior to the state-set standards; therefore, the state paid premium prices for it. [Text] [Beijing RENMIN RIBAO in Chinese 12 Sep 81 p 1]

PREFECTURE RICE PRODUCTION--The early rice output of Ningbo Prefecture in Zhejiang exceeded 1.37 billion jin in 1981, 170 million jin more than that in 1980. [Hangzhou Zhejiang Provincial Service in Mandarin 0400 GMT 6 Oct 81]

CSO: 4007/33

END

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28 October 1981

China Report

AGRICULTURE

No. 170

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28 October 1981

CHINA REPORT

AGRICULTURE

No. 170

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

Beijing Water Table Falls; Shortage a Problem
(BEIJING RIBAO, 2 Aug 81) 1

Sichuan Province Develops Improved Varieties of Rice
(SICHUAN RIBAO, 20 Aug 81) 3

Luke No 3, by Jiang Shanzhi
Guichao Variety, by He Xiaoping

CCPCC, State Council Issue Decision on Developing Forestry
(RENMIN RIBAO, 24 Aug 81) 6

Briefs
Sugar Beet Harvest 8
New Fine-Wool Sheep 8
Rapeseed Production 9
Nuclear Water-Production Prospecting Technology 9

Fujian

Province's Spring Peanut Harvest 'Best in History'
(Wang Zhicheng; FUJIAN RIBAO, 9 Aug 81) 10

Some Areas Report Surplus Procurement of Soybeans, Peanuts
(Chen Guocheng; FUJIAN RIBAO, 14 Aug 81) 11

Zhangpu County Achieves Bumper Spring Peanut Harvest
(Yan Liren, Yang Anle; FUJIAN RIBAO, 16 Aug 81) 13

County Changes Order of Rice, Soybean Rotation Cropping
(FUJIANG RIBAO, 26 Jul 81) 15

Province Achieves Bumper Spring Soybean Harvest
(Dong Diwei; FUJIAN RIBAO, 27 Jul 81) 17

Rice Blast Cause of This Year's Devastation of Early Rice
(FUJIAN RIBAO, 15 Aug 81) 18

Briefs
Qingliu County Soybeans 25
Country Tea Production 25

Guangdong

Meixiam Prefecture Achieves Bumper Summer Harvest
(NANFANG RIBAO, 24 Aug 81) 26

Semiannual Commune, Brigade Enterprise Figures Given
(NANFANG RIBAO, 19 Aug 81) 27

Zhanjiang Prefecture Increases Peanut Yield 10 Percent
(NANFANG RIBAO, 22 Aug 81) 29

Fengkai County Increases Rosin Production Over 90 Percent
(NANFANG RIBAO, 20 Aug 81) 30

Briefs
Hainan Oil Palm Farm 31
Mountain, Forest Rights 31

Guizhou

Briefs
Autonomous Prefecture Production 32

Jiangsu

Briefs
Xinyi County Wheat Sowing 33

Nei Monggol

Briefs

Xinhe County Rewards Peasants 34
Jirem League Development 34

Shandong

Briefs
Wheat Sowing 35

Zhejiang

Increased Use of Chemical Fertilizers Aids Production (ZHEJIANG RIBAO, 28 Jul 81) 36

Province Procurement Price of Soybeans Raised 50 Percent (ZHEJIANG RIBAO, 2 Aug 81) 38

Increased Number of Rabbits Raised by Commune Families (ZHEJIANG RIBAO, 30 Jul 81) 39

Yunnan

Production Responsibility System at State Farms Successful (RENMIN RIBAO, 7 Aug 81) 40

ABSTRACTS

AGRICULTURAL EXPERIMENTS

SHANXI NONGYE KEXUE /SHANXI AGRICULTURAL SCIENCES/ No 7, Jul 81 .. 42

AGRICULTURAL SCIENCE

FUJIAN NONGYE KEJI /FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY/ No 4, 10 Aug 81 45

NONGYE KEXUE TONGXUN /AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER/ No 8, 17 Aug 81 48

ENVIRONMENTAL SCIENCE

HUANJING KEXUE /ENVIRONMENTAL SCIENCE/ No 4, 30 Aug 81 50

FORESTRY

LINYE KEXUE /SCIENTIA SILVAE SINICAE/ No 3, Aug 81 54

GENETICS

YICHUAN XUEBAO /ACTA GENETICA SINICA/ No 3, Sep 81 56

PLANT PROTECTION

ZHIWU BAOHU /PLANT PROTECTION/ No 4, 8 Aug 81 58

I. GENERAL INFORMATION

BEIJING WATER TABLE FALLS; SHORTAGE A PROBLEM

Beijing BEIJING RIBAO in Chinese 2 Aug 81 p 1

/Article by Staff Commentator: "Everyone Is Responsible For Conserving Water"/

/Text/ Since the last 10 days of July, drought and less than average rainfall have persisted in this city, temperatures have been high and the weather has been hot and sultry. The amount of water used has drastically increased. The present water supply capabilities of the city's water company can no longer satisfy the needs for water of the masses in daily living and industrial production. This problem has become one requiring the attention of each sector and the people of the whole city and requiring an urgent solution by joint efforts.

The shortage of water supply occurring at present in Beijing is not by chance. The water resources in the Beijing area were not rich originally. During the past 2 decades and more, as the urban population increased dramatically and as industrial and agricultural production developed, the amount of water needed for living and for industrial and agricultural production in Beijing city increased by multiples. Because of the overexploitation of underground water, the underground water level has continued to drop. According to surveys, under the ground of Beijing city, a funnel area of 1,000 square kilometers with a dropping water level has already been formed. The average drop in water level is 4.3 meters, while the central area has a maximum drop of about 20 meters. The shortage of water has already become an outstanding problem in the construction of the capital. The method of solving this problem is to open up sources and to conserve the flow. Opening up sources means first to fully utilize water resources of the ground surface; this requires building new reservoirs to store water in some regions and refilling underground water in flatland regions. But these measures require extensive construction, a large amount of capital and a long time, and they can only be carried out according to plan when the state's finances and material supplies allow. To solve the present problem, the people of the entire city must be mobilized to carry out all effective measures and to use all methods to conserve the use of water.

Conservation of the use of water must first be carried out starting with the industrial and mining enterprises. The amount of water used by the city's industrial and mining enterprises constitutes 42 percent of the total amount of water used by the entire city. But the waste is serious. This is mainly because the average rate of circulated use of water by the factories is very low. There are many factories that do not circulate later for use, so a massive amount of water which can be used many times is used only once and drained away. There are also many factory and mining enterprises

that use water without the necessary control systems: running water and leaking water are serious. The causes of these problems are mainly that the leading comrades of some enterprises do not have sufficient understanding of the importance of conservation in the use of water. Whenever conservation of water is mentioned, some comrades consider it is a "small" matter. They are not enthusiastic about circulating water for use: they emphasize objective difficulties, they believe it is troublesome, and they delay or postpone inclusion of such efforts in the daily business agenda. There are also leading comrades of some enterprises who do not understand the measures to levy fees on private wells. They express opposition and believe this is "a mean attempt to levy miscellaneous taxes." These comrades should realize that nature's water is not inexhaustible. It is finite, like such resources as coal and petroleum; therefore, water is very precious to the state. Its proportion in the cost of enterprises may be relatively low, but its role is very important. Wasting water will bring about more serious results to people's lives and industrial and agricultural production. We hope each factory, mine and enterprise will overcome the ideology of departmental selfishness, adopt an overall view, take immediate action, and use all means to carry out the work of circulated use of water well. Each unit should also strengthen management of water use: besides educating the workers in conservation of water, it should also establish and make sound the management system, strengthen maintenance and repair of water pipes, stop leaks, and prevent the occurrence of running water, leaking water and seepage of water. Concerned departments of the city should strengthen management of the use of water by each unit, establish necessary quotas for water supply, and collect unified and reasonable fees. Double fees must be collected from units that use more than their quota of water. Water conservation measures and techniques must be established within a definite period and implemented. Because of the insufficient water resources in Beijing, expansion and building of new factories that use large amounts of water and cause serious pollution should be strictly controlled. In the use of water for agriculture, because irrigation quotas are not strictly controlled, because the irrigation techniques are relatively backward, wastefulness is relatively serious, and thus rational irrigation quotas should be established, and conditions should be created to gradually popularize advanced irrigation techniques of spray irrigation and drip irrigation.

The potential for conserving the use of water for city life is also great. Everyone's daily life requires water, and everyone is responsible for conserving the use of water. At present, the waste in this regard is also great. Some people do not think of the whole situation, they only think of their own convenience, and waste a lot of water. Some faucets are not turned off for long periods, some use lengthy flow of water "to soak watermelons in water." Each unit must educate the workers in conservation of water; people who waste water must be criticized and supervised. At the same time, management must be strengthened. According to statistics compiled by the water company, family residences having a water meter can conserve an average of one-third the amount of water compared to residences without a water meter. If each family of residents conscientiously conserves the use of water and persists in conservation to form a habit, the amount of water that can be conserved a year is formidable. This will undoubtedly serve importantly in slowing the shortage of the city's water supply. The city's water company and concerned leading departments should take active measures to quickly install water meters in family residences; they should also frequently help residents inspect the water supply equipment, prevent running water and water leaks. At present, staff and worker dormitories of some units in the city practice the water fee inclusion system: each person pays a small water fee each month, and most of the water fees are subsidized by the units, so the waste of water is very serious. Concerned units should actively carry out measures to abolish the system of subsidizing water fees so as to stop waste.

9296
CSO: 4007/578

SICHUAN PROVINCE DEVELOPS IMPROVED VARIETIES OF RICE

Luke No 3

Chengdu SICHUAN RIBAO in Chinese 20 Aug 81 p 2

/Article by Jiang Shanzhi /I203 3790 0037/ of the Scientific Technology Department of the Provincial Agricultural Science Academy: "High Unit Yield, Superior Quality of Rice, Strong Resistance, Broad Adaptability--the Provincial Paddy Rice Research Institute Successfully Breeds New Variety of Xian Rice 'Luke No 3'"/

/Text/ The paddy rice research institute of the provincial Agricultural Science Academy has successfully bred a high-yielding, disease-resistant, superior-quality new intermediate xian variety of paddy rice called "Luke No 3."

Recently, the paddy rice research institute of the provincial Agricultural Science Academy invited experts, responsible cadres, and scientific and technical personnel from the seed companies of our province's major paddy rice producing regions--Wenjiang, Daxian, Leshan, Neijiang, Yongchuan, Nanchong, Yibin, and Peiling--regional agricultural science institutes, county seed stations and the results office of the provincial science committee, and the Xinan Agricultural Academy, totaling 28 units, to conduct field evaluation of the new intermediate xian paddy rice variety "Luke No 3" in a demonstration and experiment in large area production. The delegates attending the show all agreed that the growth of "Luke No 3" was prosperous, the root system was developed, the stalks were strong, large and firm, tillering was strong, the panicles were large and grains were abundant, disease resistance was strong, adaptability was broad, the quality of rice was superior, and the form of the plant and the productive potential were similar to hybrid paddy rice. Further propagation and popularization of "Luke No 3" will have significant economic meaning in increasing paddy rice production in our province.

"Luke No 3" was bred from the hybridization of "Fe 17" and "Lushuang 1011." The combination was produced in 1970 and the stable line was selected in 1975. The entire growth period is 140 days; planted as intermediate rice in southeastern Sichuan, it is sown during the last 10 days of March. Panicles emerge during the middle 10 days of July, and maturation occurs during the first and middle 10 days of August. It is suitable for cultivation as an intermediate rice in large areas in our province. According to experiments conducted in 1977 and 1980, the unit yield is from 900 to 1000 jin, the value of increased yield per mu is 71 jin more of grains than the main propagated superior variety Lushuang 1011 in our province at present, 94.3 jin more than Nanjing No 11, and 110 jin more than Zhen Zhuai. At the Xinjian Commune in Shizhu County and Shima Commune in Lu County, per mu yields reached 1,200 to 1,223 jin.

"Luke No 3" has a strong resistance to blast of rice, and it has not been observed to have been affected by bacterial blight. The quality of the rice is good, the percentage of coarse rice is 78.8 and the percentage of polished rice is 74.5, higher than the major propagated superior variety of rice currently used in production in our province. According to determinations made by the test center of the Hubei Province Agricultural Science Academy, "Luke No 3" has a protein content of 11.3 percent; the masses say the rice is soft and fragrant.

Since the planting of "Luke No 3" for demonstration in production, the area of planting has increased to 200,000 mu in recent years. The provincial paddy rice institute has carried out purification and strengthening twice in preparation for providing original seeds to each locality so that each locality can hasten propagation in order to better popularize and apply it in production.

Guichao Variety

Chengdu SICHUAN RIBAO in Chinese 20 Aug 81 p 2

/Article by staff correspondent He Xiaoping /6320 1420 1627/: "Wenjiang County Does Good Work in the General Survey and Evaluation of the Superior Variety 'Guichao' and in Storage Preparation, and Exerts Efforts To Harvest More Superior Varieties of Paddy Rice To Support Disaster Regions"/

/Text/ Wenjiang County has used every method to do the work of preparing for the storage of the superior variety of paddy rice "Guichao," to exert efforts to harvest more superior varieties and to support the disaster regions in our province.

Wenjiang County, which has successfully popularized the "Guichao" superior variety in our province, has planted over 180,000 mu of "Guichao" No 2, No 4 and No 13 throughout the county this year, constituting 92 percent of the area of paddy rice. Because transplanting was timely, application of fertilizers was appropriate, and management was careful, during the first 10 days of August the paddy rice plants headed and grains emerged and there is hope for a bumper harvest. According to typical test production, the per mu yield will not be lower than last year's 900 jin. The per mu yield of "Guichao" No 13 can reach 1,000 jin. Recently paddy rice in many heavy disaster areas in our province has been submerged under water. Some seed propagation fields of hybrid paddy rice have also been destroyed. Next year there will definitely be a shortage of superior varieties of paddy rice. For this reason, the responsible comrades of the provincial committee suggested that Wenjiang County exert efforts to harvest the superior paddy rice variety "Guichao" well in a big way to support the heavy disaster area. When the broad number of farm village cadres and masses of Wenjiang County heard about this, they all regarded the support of heavy disaster regions as a glorious task that must not be refused. Under the leadership of the county committee, each commune thought of ways to do the work of general surveys and evaluation of the superior variety of "Guichao" well and carry out preparation for harvesting and storage well.

Now the entire county has transferred technical personnel from the county seed company, the county agricultural technology station and the plant protection station to join the communes and brigades to carry out large area general surveys to determine 100,000 mu of qualified "Guichao" superior variety fields. To assure the purity of

the seeds, each commune brigade has assigned agricultural science personnel to be specifically responsible for guiding the work of weeding out impure plants and diseased plants from the seed fields. The county has asked each production team and operating unit to harvest and thresh each individual plant, dry it, preserve it, assure the seed grains are full, and make sure there are no semifilled husks and no mildew. At the same time, regulations have been issued to allow only the county seed company to contract with purchasing units from outside the county when selling seeds to outside localities so that the quality can be assured and the prices will be reasonable. At present, the Wenjiang County Seed Company has negotiated with each commune and brigade, signed seed purchasing contracts, taken advanced orders for harvesting and storing superior seeds and has mobilized various types of preparatory work.

9296
CSO: 4007/577

CCPCC, STATE COUNCIL ISSUE DECISION ON DEVELOPING FORESTRY

Beijing RENMIN RIBAO in Chinese 24 Aug 81 p 1

/Article: "Thoroughly Implementing the Decision of the Chinese Communist Party Central Committee and the State Council: Each Locality Grasps Tightly the Protection of Forests To Develop Forestry and Stabilizes Rights of Mountain Forests, Establishes the Responsibility System in Forestry, and Strengthens Centralized and Unified Management of Timber"/

/Text/ Beijing, 23 August--On 8 March the Central Committee of the Chinese Communist Party and the State Council issued a "decision on several problems concerning the protection of forests and the development of forestry." Each province, city, party committee of the autonomous region and the people's government paid attention and took further steps to conscientiously implement the decision on the basis of thoroughly accepting the decision.

Up to the first 10 days of August, 19 provinces, cities, party committees of autonomous regions and people's governments of Beijing, Liaoning, Hebei, Shaanxi, Guangxi, Shandong, Yunnan, Ningxia, Hubei, Tianjin, Qinghai, Fujian, Shanxi, Jilin, Anhui, Jiangsu, Jiangxi, Guizhou, and Xizang has held forestry meetings and implemented the decision concerning problems in forestry issued by the party Central Committee and the State Council. Some provinces and autonomous regions are actively preparing to hold forestry meetings. The provinces, cities and autonomous regions that have already held such meetings have all combined the actual situation of their localities to establish "regulations" or "notices" to implement the "decision" concretely.

Each locality has broadly launched the work of stabilizing rights over mountains and forests, and has implemented the production responsibility system in forestry. Up to the present, the nation already has 23 provinces, cities and autonomous regions which have established test points and issued certificates of rights. Among them, 10 provinces, cities and autonomous regions have already begun to carry this out throughout the area. The nine provinces, cities and autonomous regions of Funian, Liaoning, Shanxi, Gaungxi, Hunan, Guizhou, Henan, Shaanxi, Beijing have already zoned private mountain land for over 2.7 million family commune members; the total area has reached over 10 million mu. Commune members in Shaanxi and Shanxi Provinces have already afforested 1.43 million mu of deserts, waste beaches and private mountains. Many forms of production responsibility system in forestry. Shandong Province already has over 50,000 brigades practicing the production responsibility system in forestry, constituting 60 percent of the total number of brigades throughout the province. The number of production teams in Henan Province that have implemented the production responsibility system in forestry constitutes over 50 percent of the total number of production teams, and the area has reached 3.24 million mu.

In strengthening centralized and unified management of timber, many provinces and autonomous regions have established concrete management methods or issued corresponding regulations in accordance with the spirit of the "decision." Many provinces and autonomous regions have also zoned some county forest regions. Seven provinces--Hubei, Hunan, Jiangxi, Hebei, Shaanxi, Shanxi and Anhui--have zoned a total of 159 county forest regions and clarified the scope of centralized and unified management of timber.

The provinces of Hebei, Guangdong, Hunan, Fujian have also brought out some food grains this year and readjusted and reduced the tasks of procurement of food grains of the forest regions, solving the problem of insufficient rations of food grains for commune members in forest regions. The provinces, cities and autonomous regions of Guangxi, Fujian, Hebei and Beijing have decided that each year a fixed amount of capital is to be taken out of local finances for developing forestry. Guangxi has appropriated 5 million yuan and Hebei has appropriated 3 million yuan to help the localities develop forestry.

Many localities have established and made sound the public security, procuratorial organs and people's courts for forestry, filled out and strengthened the public security guards for forestry, and strengthened the rule by law to protect forests and to maintain order in forest regions.

The party committee and government at each level have included the development of forestry in the schedule of important tasks, the soundness of forestry agencies has been enhanced, and it has been decided that the leading agencies at each level assign a leading party and administrative cadre to oversee or specifically take charge of forestry work.

9296
CSO: 4007/577

BRIEFS

SUGAR BEET HARVEST--Beijing, 8 Oct (XINHUA)--Sugar beet output of Heilongjiang Province, China's leading producer, is estimated to be 3.2 million tons this year, slightly higher than last year, despite sustained rains and waterlogging in the summer, according to the Ministry of Agriculture. Heilongjiang grew 256,000 hectares of sugar beets this year, accounting for half of the country's total. More than 10 percent of the area was waterlogged. The province's 1980 output was 3.16 million tons. Inner Mongolia, China's third major sugar beet producer, expects to harvest 20 percent more on 68,000 hectares this year than last, the ministry said. Harvesting is now being done. These two areas expanded sugar refining facilities over the past few years to cope with increased output. Heilongjiang raised its refining capacity from 300,000 tons last year to 380,000 tons this year with the addition of two new sugar refineries and revamping of existing ones. Inner Mongolia has increased its annual capacity from 130,000 tons to 140,000 tons through technical transformation of several existing big refineries. [Text] [Beijing XINHUA in English 0250 GMT 8 Oct 81]

NEW FINE-WOOL SHEEP--Beijing, 8 Oct (XINHUA)--China has succeeded in breeding a new type of sheep that produces heavy fleece of long fine wool, according to an announcement made by the Ministry of Agriculture today. The new breed yields a clip of six to seven kilograms a year on the average, mostly of 64 count quality. The rate of clean wool reaches 50 percent. The length of the staple is between 9 and 10 centimeters. The fine wool fibers are beautifully crimped and the fleece carries sufficient oil to keep the fibers soft and pliable. Tests show that the elasticity, tensible strength and other physical and chemical properties of the wool are better than that from existing breeds in China and compatible in some aspects to the world's best fine wool. The fabrics produced with this kind of wool are on a par with those woven with fine imported wool. China's breeding of fine-wool sheep has developed rapidly since 1973. To date, the country has 25 million fine-wool sheep and improved breeds. Quite a number of research units and universities are engaged in such work in Xinjiang, Inner Mongolia and Jilin Province. [Text] [Beijing XINHUA in English 1214 GMT 8 Oct 81]

RAPESEED PRODUCTION--Beijing, 15 Oct (XINHUA)--The Oil-Bearing Crop Institute of the Chinese Academy of Agricultural Sciences has achieved results in helping 16 counties in Hubei, Hunan, Anhui and Jiangxi Provinces improve their rape-growing technique. Compared with last year, the total output of rapeseed from the 1,565,200 mu of fields in these counties this year increased by 31,930,000 jin, worth 16,763,000 yuan. It is estimated that about one-half of the increased yield is attributed to the improved technique in growing the crop. [OW201145 Beijing XINHUA Domestic Service in Chinese 0033 GMT 15 Oct 81]

NUCLEAR WATER-PROSPECTING TECHNOLOGY--Beijing, 2 Oct (XINHUA)--China has achieved initial results in applying nuclear technology to prospecting underground water sources. Based on the findings of hydrogeology and structural geology as well as on the principle of prospecting and drilling mines by applying radioactive materials, the new technology is used to locate underground water sources by measuring the differences in radioactivity underground to prospect the water stored there. At present, this technology is being used in various provinces and autonomous regions, including Shandong, Jiangsu, Sichuan, Guangxi, Guangdong, Fujian, Hubei, Hebei and Liaoning. A chemical fibre plant built in the region with igneous rocks in Jiangsu Province could not be put into normal operation because of water shortage. The Jiangsu Provincial Geological Bureau adopted this new technology and successfully drilled a well with a daily water-producing capacity of 270 dun to meet the needs of this plant. The first national symposium on this technology, jointly sponsored by the Chinese Society of Nuclear Science and the Chinese Society of Geology, was held in Pingying County, Shandong Province from 20 to 25 September. The symposium affirmed that the new technology, a new method applied in hydrogeological and geophysical prospecting and drilling, has good prospects in locating underground water sources as the new technology can be easily applied with portable instruments and can achieve high efficiency at low cost. [Beijing XINHUA Domestic Service in Chinese 0051 GMT 2 Oct 81]

CSO: 4007/34

PROVINCE'S SPRING PEANUT HARVEST 'BEST IN HISTORY'

Puzhou FUJIAN RIBAO in Chinese 9 Aug 81 p 1

[Article by Wang Zhicheng [3769 1807 4453]: "Our Province's Spring Peanut Harvest Is Best Harvest in History; Over 760,000 Mu Have Already Been Harvested and the Average Per Mu Yield Was 229 Jin, an Increase of 74 Jin Over Last Year"]

[Text] This year, our province's over 1.16 million mu of spring peanuts grew well in general. According to statistics released on 7 August by the provincial agricultural department, the whole province has already harvested over 760,000 mu of spring peanuts, and the average per mu yield was 229 jin, an increase of 74 jin over last year, the best harvest in history.

This year, each locality, especially each peanut-producing region, conscientiously readjusted the distribution of paddy and dryland crops, suited measures to local circumstances, developed superiority, and expanded the planting area of spring peanuts--the area of actual planting was expanded by more than 80,000 mu over last year. Because the production responsibility system was implemented, many localities practiced contracting production of peanuts to the laborer and to the family, greatly mobilizing the enthusiasm of the commune members; with the popularization of the superior varieties of "yueyou 551" and "yuexuan 58" and with improved planting techniques, the growth trend of spring peanuts has always been good. Since the harvest, bumper harvests have been reported continously, and numbers of high-yielding fields and bumper harvest plots have emerged. In Jinjiang and Longxi Prefectures, which are major peanut-producing regions, the unit yields have all surpassed 200 jin, reaching 217 jin. Xiamen city has already harvested over 150,000 mu, and the unit yield has reached 297 jin. Putian Prefecture's harvesting season of spring peanuts is relatively late but bumper harvests are expected: over 50,000 mu have already been harvested, and a per mu increase of 58 jin has been registered. Many localities have reported that this year the actual yield of spring peanuts has surpassed the estimated yield; the fields that have already been harvested have generally produced increased yields and those fields that have not been harvested may produce even higher yields. Viewing the crops that have already been harvested, an increased yield of over 30 percent has been common, and there are many cases of increased yields of over 50 percent.

9296
CSO: 4007/589

SOME AREAS REPORT SURPLUS PROCUREMENT OF SOYBEANS, PEANUTS

Fuzhou FUJIAN RIBAO in Chinese 14 Aug 81 p 1

[Article by Chen Guocheng [7115 0948 2052] and the county food bureau and county reporting group: "Jinjiang Prefecture's Soybeans Warehoused Increased 1 Million Jin Over the Same Period Last Year; Dongshan County Completed the Entire Year's Peanut Procurement Task With a Surplus of 16 Percent"]

[Text] As of 3 August, Jinjiang Prefecture has already completed this year's soybean procurement task of 7 million jin with a surplus of 240,000 jin, an increase of 1.08 million jin over the same period last year.

Jinjiang Prefecture has the largest soybean procurement task in the whole province. This year, it implemented the production responsibility system and developed the enthusiasm of the collective and the individual commune members. Over 170,000 mu of spring soybeans of the entire prefecture realized bumper harvests: per mu yields of 250 jin could be found everywhere. Huian County has already warehoused 3.33 million jin of soybeans, completing the procurement task with a surplus, an increase of 420,000 jin over the same period last year. The amount of soybeans warehoused in Nanan County surpassed the procurement atsk by onefold. The whole prefecture has 23 communes mainly producing soybeans, and all have fulfilled or overfulfilled the procurement task. Some counties also developed the superior situation of producing a bumper harvest of soybeans and sold more soybeans to the state as a substitute for food grain procurement tasks, so as to make up for the drop in the harvest of early rice. For example, Nanpu Commune in Huian County and Luoxi Commune in Quanzhou city completed soybean procurement tasks with a large surplus and used soybeans to substitute for food grains, thus completing the whole year's food grain procurement task.

After this year's spring soybeans were produced, the provincial people's government readjusted the uniform procurement price for soybeans. Commune members of the major soybean-producing communes in Jinjiang Prefecture received an increase in income of about 1 million yuan because the procurement price of soybeans was raised. The food grains department conscientiously carried out price negotiations according to quality and the policy of giving better prices for better quality. The quality of soybeans warehoused this year is generally better than last year.

As of 9 August, 5.22 million jin of peanuts were warehoused in Dongshan County, completing the year's procurement and price raising tasks with a surplus of 16 percent.

One of our province's major peanut-producing region is Dongshan County. This year, the county again realized a bumper harvest of peanuts. The broad numbers of cadres and commune members of the farm villages were happy and actively sold their peanuts to the state. The progress of warehousing peanuts throughout the county was 37 days faster than the same period last year. The quality was better than previous years: 90 percent were above medium quality. The peanut harvest of the Baicheng Brigade of Chencheng Commune was good: the total yield increased 48 percent over last year. Commune members sold 430,000 jin of peanuts to the state at once, surpassing the task by 150,000 jin; each family sold an average of 804 jin of peanuts; this brigade warehoused the most and achieved the best quality harvest throughout the county. Dongying Brigade commune member Weng Laohai [5040 5071 3189] of Qianlou Commune completed the procurement task of 323 jin and also provided 1,000 jin of peanuts for sale to the state, while at home he still had several hundred jin of peanuts filling large and small containers. At present, each commune and brigade throughout the county is continuing to sell peanuts to the state.

9296
CSO: 4007/589

ZHANGPU COUNTY ACHIEVES BUMPER SPRING PEANUT HARVEST

Fuzhou FUJIAN RIBAO in Chinese 16 Aug 81 p 1

[Article by Yan Liren [0917 0448 0086] and Yang Anle [2799 1344 2867] of the Zhangpu County Committee's Reporting Group: "Readjusting the Crop Distribution, Popularizing Scientific Planting--Zhangpu County Produces an Increased Yield of 10 Million Jin of Peanuts This Year"]

[Text] Zhangpu County, one of our province's base counties of oil-bearing crops, realized a large bumper harvest of spring peanuts on nearly 120,000 mu this year. According to the forecast figures at the end of July of each commune (farm, the total yield of peanuts of the whole county reached over 25.6 million jin, an increase of over 10.7 million jin over last year, or 72 percent, and the unit yield rose 71 jin, all creating the highest record in history.

In Zhangpu County, the big increase in yield of peanuts this year was mainly due to two aspects. The first was that the crop distribution was appropriately adjusted according to the actual situation in Zhangpu County, which is located along the coast and which has sandy soil and slopes. While concentrating on food grain production, measures were suited to local circumstances to expand the planting area of spring peanuts. This year, the area of spring peanuts throughout the county increased by more than 16,000 mu over last year. The second was that the enthusiasm of the masses and scientific methods were combined. This year, Zhangpu County conscientiously implemented the various forms of the production responsibility system, fully mobilizing the productive enthusiasm of the commune members. The party and administrative leadership of each level used many measures and forms according to the different needs of the thousands of families and tens of thousands of commune members to help and guide the farmers in scientific planting. This year, the whole county generally carried out early sowing in time. Superior varieties of autumn peanuts, "yueyou 551" and "yuexuan 58", constituted over 80 percent of the crops, and thus the budding percentage of this year's spring peanuts was high, the resistance to adversity was strong, and bumper harvests were achieved. The county government placed a lot of emphasis on the production of oil-bearing crops. At the beginning of April, it held an onsite peanut fields management meeting at the Chihu Commune, printed materials and emphasized accomplishing well five key measures--the seedling period's sidedressing of fertilizers, application of fertilizers outside the roots, weeding and banking of soil, scientific management of water, and prevention of diseases and insect pests. Instead of the old habit of not applying sidedressings to peanuts or applying sidedressing of fertilizers late,

it propagandized the scientific principles of sidedressing of fertilizers during the seedling period to stimulate healthy branches and more flowers, and the spraying and application of phosphorous, potassium, molybdenum and boron fertilizers that produce visible results. Throughout the county, over 100,000 mu were given sidedressing of fertilizers during the seedling period and sidedressing of fertilizers outside the roots. Because the plants were of superior varieties and because field management was good, the growth trend of peanuts this year was good, damage by disease was light, there was more fruiting, there was less semiempty fruit, each peanut was full, the unit yield generally rose, and the conversion rate of wet peanuts also rose from the 43 percent of previous years to 51 percent. The total yield of peanuts produced by the Houhu Brigade of Chihu Commune reached over 480,000 jin, double that of last year. The unit yield surpassed 300 jin. Farmer technician Chen Jianlin [7115 1696 2651] of this brigade and his family planted 9 mu of peanuts, and they harvested a total of 3,850 jin of dry peanuts, including 1 mu of high-yielding experimental field which produced a harvest of 670 jin. At present, the commune members are selling the bumper harvest of peanuts to the state, and the peanut procurement task and the added price procurement task will be completed with surplus.

9296
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COUNTY CHANGES ORDER OF RICE, SOYBEAN ROTATION CROPPING

Fuzhou FUJIAN RIBAO in Chinese 26 Jul 81 p 1

[Article: "Changing the Order of Rice and Soybean Rotation Cropping in the Single Season Rice Fields; Datian County's Spring Soybean Yield Increases Eigthfold"]

[Text] Datian County has readjusted its planting system, changing the past method of planting one season of autumn soybeans after harvesting single season rice to first planting one season of spring soybeans and then planting single season rice, i.e., changing the "rice-soybean" system to the "soybean-rice" system. This year, the county utilized the single season rice fields and the sweet potato fields on the mountains to plant spring soybeans covering 9,318 mu, and a total of over 1.4 million jin of spring soybeans was harvested, an increase of more than eight times over last year.

Datian county historically used single season rice fields to plant autumn soybeans. In 1978, the agricultural science station of Shangjing Commune introduced 2 liang of "gutian spring soybean" into its garden and harvested 4 jin of spring soybeans. In the second year, it sowed 4 fen of land and harvested 104 jin of soybeans. The variety showed a broad adaptability, thick stems, more pods, and full seeds. It was also resistant to disease. The party committee of the commune believed that changing the planting of autumn soybeans to planting spring soybeans in single season rice fields would not affect the yield of rice, but that each mu could produce an increased harvest of over 100 jin of soybeans, so it decided to mobilize the masses to plant spring soybeans in a big way. Last year, the agricultural science station of the commune bought from the country seed company over 2,000 jin of "gutian spring soybean" and test planted 230 mu of spring soybeans at many test localities on the superior variety farm of the commune, and in the Shangjing, Huangcheng and Xiling Brigades; the average per mu yield of spring soybeans amounted to 173 jin, with the highest reaching 200 to 300 jin. This spring, the Datian County committee and the county government summarized and popularized this experience of the commune and implemented large area double cropping of "soybean and rice" (or soybean and sweet potato) throughout the county. Everyone saw that developing spring soybeans saved work and saved costs and was more economical than engaging in sideline production. Thus, everyone took the initiative to change the planting of autumn soybeans to planting spring soybeans. Guangping Commune popularized the planting of spring soybeans over 1,880 mu this year, and generally realized bumper harvests. Qidao, Jianshe and Taihua Communes utilized mountain land to plant spring soybeans in a big way, changed single season sweet potato to one crop of soybean and one crop of sweet potato, and the per mu yield reached over 120 jin. Because

the soybean root nodule bacteria fixed nitrogen, and with the withered roots and fallen leaves, the root system remained in the fields, the fertility of the land visibly increased, and this did not cause a reduction in the harvest of the sweet potato aftercrop. The Zhongxin Forest Farm of Jianshe Commune planted over 40 mu of spring soybeans as a companion crop on young forest land and in orange plantations this year and all realized bumper harvests.

9296
CSO: 4007/589

PROVINCE ACHIEVES BUMPER SPRING SOYBEAN HARVEST

Fuzhou FUJIAN RIBAO in Chinese 27 Jul 81 p 1

[Article by Dong Diwei [5516 1593 0251] of the Department of Agriculture: "Our Province's Spring Soybeans Increase Yield by 33 Percent; After Implementing the Responsibility System, the Whole Province's Area of Soybean Plants Increases by 70,000 Mu Over Last Year, the Area of Companion Planting Increases Nearly Onefold From Last Year, and the Unit Yield Increases 23 Jin"]

[Text] Our province achieved a general bumper harvest of spring soybeans: the total yield increased 33 percent over last year and the unit yield was 156 jin, 23 jin more than last year. In Longxi Prefecture, the total yield increased by 46 percent and the unit yield increased by 27 jin, all creating the highest levels in the region's history. In Huian County, one of the major spring soybean-producing regions, the total yield increased 2 million jin over last year.

According to reports by the agricultural departments of each locality, the general bumper harvest of spring soybeans this year was mainly the result of the conscientious implementation of the various policies of the party in the farm villages at each locality. After implementing the production responsibility system, the enthusiasm of commune members to plant more spring soybeans and to plant well was very high. After completing the planned planting area, many ways were used to dig for the soil's potential to engage in companion planting in a big way. The planting area throughout the province was expanded by nearly 70,000 mu over last year, and the area of companion planting reached some 400,000 mu, an expansion of nearly onefold over last year. Changtai County undertook expanded planting in a big way, and the total yield doubled over last year. Xiamen city popularized companion planting on sugar cane plantation,s and this alone produced an additional harvest of 1.6 million jin of soybeans, constituting one-fifth of the total yield of spring soybeans.

Each locality conscientiously implemented scientific planting of soybeans, concentrated on the key technical measures, and exerted efforts to raise the unit area yield. This is another important reason for this year's bymper harvest of spring soybeans. This year, regardless of whether it was the collective or the individual, everyone did the work of carefully selecting seeds well, sowed the seeds in time, applied sufficient fertilizers, managed the fields in a timely way, made sure the seedlings were full and strong, made sure the seedlings prospered, and made sure the foundation for the seedlings to produce bumper harvests was laid well. With the good weather during the flowering and pod-forming stages, the fruiting percentage and the hundred grain weight generally increased over presious years.

9296
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RICE BLAST CAUSE OF THIS YEAR'S DEVASTATION OF EARLY RICE

Fuzhou FUJIAN RIBAO in Chinese 15 Aug 81 p 2

[Article by the inspection group of the resistance of early rice varieties to rice blast of the provincial paddy rice breeding cooperation group: "The Reason for This Year's Epidemic of Rice Blast in Early Rice and Suggestions for Future Prevention and Control"]

[Text] Editor's Note: This inspection report on rice blast disease in early rice was written by 17 paddy rice experts and technicians who went deeply into the fields and conducted actual inspection. They analyzed the reason for this year's epidemic of rice blast disease in early rice and proposed measures to control further epidemic outbreaks of rice blast. It is valuable as a reference in guiding present and future efforts to prevent and control rice blast disease.

After the big outbreak of this year's rice blast disease in early rice, people worried about this question: Will the disease become epidemic during the late rice crop? Viewing the characteristics of the occurrences of rice blast in our province, early rice is generally more seriously affected by the disease than late rice. But in some years, the disease has been serious during both seasons, and especially in the mountain regions, the late season is more seriously affected than the early season. This year's epidemic of rice blast in early season rice left a lot of bacterial sources for the late rice crops. Regarding the present situation, a lot of the single season intermediate and late rice and double season late rice transplanted early has begun to contract the disease. This is a danger signal! There must never be indulgence in wishful thinking. Each locality must implement the guideline that "prevention is more important than control", conscientiously handle diseased straws, and eradicate the center of occurrence of rice blast as early as possible. The leadership at each level, especially the leadership in localities where the disease has already occurred, should learn the lesson of the early season and strengthen the leadership in the prevention and control of rice blast and other disasters. The insensitive and irresponsible attitudes of not having sufficient confidence in preventing and

controlling rice blast, "becoming frightened when talking about the disease", and entertaining wishful thinking regarding rice blast should all be eliminated. If the leadership at each level raises its spirits and takes the lead in going deeply into the frontline of production with the attitude of being highly responsible for the people, understands the constantly changing situation, mobilizes the masses and organizes forces in all aspects, and joins all efforts, rice blast in late rice can be controlled completely.

During the last 10 days of June, as our province's early rice was seriously affected by rice blast disease, 17 of us under the leadership of paddy rice expert Lin Quan [2651 2938], deputy director of the provincial Agricultural Science Academy and member of the provincial paddy rice breeding cooperation group, and Comrade Li Senhui [2621 2773 1920], paddy rice expert, deputy director of the Rice and Wheat Research Institute of the provincial Agricultural Science Academy and member of the provincial paddy rice breeding cooperation group, went to the four prefectures of Jianyang, Sanming, Longyan and Longxi to inspect the rice blast disease in paddy rice. We inspected the agricultural science institutes of these four prefectures, the Congan County Agricultural Science Institute, the superior seed farms of the four counties of Jianou, Liancheng, Longyan and Husan, and 21 production units of 12 commune brigades in the 9 counties of Congan, Jianyang, Jianou, Shaxian, Mingxi, Longyan, Liancheng and Longhai. We took 12 days and travelled over 2,000 kilometers. During the inspection, we saw with our own eyes the damage by rice blast, especially in Sanming and Longyan, where the damage was the most serious. At the same time, we also saw the moving and stubborn struggle of the broad ranks of cadres and commune members in the farm villages against the disease. Through this field investigation and visit we gained a preliminary understanding of the causes of the epidemic of rice blast in early rice this year. During the first 10 days of July at Zhangzhou, when we concluded our brief visit, we carried out a conscientious discussion, we reached a relatively unanimous view and we made some suggestions on future prevention and control and on scientific research.

Analysis of the Cause of the Epidemic of Rice Blast in This Year's Early Rice

This year, the disease began during the seedling period in our province's early rice. Up to the last 10 days of June, an area of over 1.7 million mu had already been affected by leaf rice blast throughout the province. Since the founding of the nation, this is certainly the year with the earliest occurrence and the fastest spread of the disease, the widest epidemic, the greatest threat by the disease and the greatest loss due to the disease. Why has this year's rice blast been so serious? According to what we heard and what we saw along the way, we believe there are four reasons:

First, the red line varieties lost their disease resistance; this was the internal cause of the occurrence of the disease. The variety affected by the disease over large areas in four regions was mainly the red line variety. According to reports by Sanming Prefecture, the "red 410" had been popularized over a large area for 5 years; the area had been expanded year after year, and damage by the disease had increased year after year; by 1979, the area of occurrence of the disease was about 100,000 mu. In 1980 it reached 270,000 mu, and in 1981 it was over 700,000 mu. In Jianyang Prefecture, the area of occurrence of the disease affecting the "red 410" increased from 30,000 mu in 1980 to over 120,000 mu in 1981. All this showed that the disease-resistance of the red line variety was gradually being lost.

Second, the climate factor was favorable to the occurrence and spread of the disease. This was the main external reason for the occurrence of the disease. The characteristics of this year's weather were high temperatures, little rain and sufficient sunshine from the middle and last 10 days of April to the first 10 days of May; these conditions were favorable for the growth of the seedlings and tillering of early rice. From the middle and last 10 days of May to the first and middle 10 days of June, temperatures dropped, there was more rain, the amount of sunshine was deficient, and this was unfavorable for the growth of early rice, and as a result, the rice seedlings grew prosperously and remained green, creating a favorable condition for the occurrence of the disease and for the bacteria to attack. Therefore, from the middle 10 days of May, the area affected by the disease gradually expanded. According to statistics, during the last 10 days of June the area affected by leaf blast disease throughout the province was 1.81 million mu; at the beginning of July panicle neck blast affected an area of 1.06 million mu, and over 114,000 mu produced no harvest. In Jianyang Prefecture, on 21 May the area of disease was 10,000 mu, by 8 June the area of disease had expanded to 81,000 mu, and by 15 June the area of disease had expanded again o 128,000 mu. In Sanming Prefecture, during the middle 10 days of May the area of disease was 100,000 mu, during the first 10 days of June the area of disease had expanded to 300,000 mu, and by 16 June the area of disease had expanded again to 710,000 mu. This shows that when the temperature drops to the range suitable for the occurrence of the disease and when rainfall increases and sunshine lessens, the conditions are favorable for the occurrence of the disease. Therefore, the weather conditions served the major function of inducing rice blast in the northwestern mountain regions of Fujian to spread quickly and become an epidemic over a wide area, and to cause a big threat.

Third, pursuing high yields, unilaterally applying nitrogenous fertilizers and neglecting scientific planting are important human factors that induced the occurrence of the disease. This year, our province's farm villages implemented the production responsibility system and the productive enthusiasm of the farmers was extremely high, but because the knowledge of scientific planting was not sufficiently widespread, many farmers sought high yields and unilaterally applied nitrogenous fertilizers, causing the rice seedlings to remain green and to grow prosperously, inducing the occurrence of the disease. For example, the Yuzhu Brigade of Gaosha Commune in Shaxian purchased an additional 60,000 jin of ammonium carbide besides the 240,000 jin distributed by the state; the per mu average application of fertilizers was as high as over 300 jin; as a result, disease occurred over large areas and this resulted in a serious reduction in yield.

Fourth, popularization and implementation of comprehensive effective prevention and control measures were relaxed, so the area of propagation of the pathogen expanded and the numbers increased cumulatively. This is the main reason for the expansion of the occurrence of the disease; for example, the seeds were not disinfected, diseased straws were not treated, the center of occurrence of the disease was not controlled and eradicted in time, so in this year's weather conditions, which were especially suitable for the occurrence of the disease, the disease broke out.

In addition, a problem that was most vigorously pointed out by each locality was that the supply of farm chemicals was not supplied in time. When the disease occurred, farm chemicals could not be purchased, the farm chemicals that were bought had mostly been kept for many years and some had even lost their effectiveness; thus they could not control the expansion and spread of the disease and so the farmers suffered great economic loss.

Rice Blast Can Be Prevented and Controlled

Although this year's rice blast disease in early rice was serious, we also saw that under the same weather conditions in many units and communes and brigades, rice blast did not occur or the disease was not serious. For example, the headquarters of Daci Institute of the Long Yan Prefecture Agricultural Science Institute has always been known as the "rice blast institute." In 1971, the institute's 300 mu of ricefields produced a per mu average of only over 70 jin because of the serious occurrence of rice blast disease. But this year the disease was light. Again, for example, the large area of early rice of the superior variety farm of Jianou County was not affected by disease, and even the most vulnerable "red 410" and the "shuanghongzao" did not contract the disease. Also, for example, the disease was slight at the Xinquan Commune in Liancheng County. What was the reason? According to the report by the Long Yan Prefecture Agricultural Science Institute, the reason is mainly that during the past few years, they undertook renewal of the varieties, treatment of the source of the bacteria, improvement in the application of fertilizers and similar measures. The experience reported by comrades of the Jianou County superior variety farm was mainly that they concentrated on three aspects in cultivation techniques: The first was not applying sidedressing of fertilizers during the second intertilling. The second was the additional application of 20 jin of potassium chloride per mu. The third was baking the fields. Secretary of the Xinquan Commune Huang Dengfa [7806 4098 4099] also did three things: first, he renewed the varieties--he did not plant "red 410," but he expanded and replaced the plants with the three varieties "77-175," "jinghong 1," and "kefuhong 2"; second, he did not plant varieties of glutinous type grains in sandy fields; third, he popularized the application of potassium fertilizers. These measures of selectively using disease-resistant superior varieties, eradicating the source of bacteria, and improving cultivation and management are consistent with the principle of "taking prevention as the key and carrying out comprenensive prevention and control". Their experience can be summed up in one statement: plant scientifically. Although the occurrence and development of rice blast is a complex problem and there are still many problems to be explored and studied, we have already grasped some of the patterns and we can utilize the patterns already grasped to carry out scientific prevention and control.

During the inspection we also discovered that the same variety showed differences in resistance or nonresistance under the ecological conditions of different regions. For example, "zuke 2" and "kejing 63-1" manifested relatively strong resistance to the disease in Jianyang Prefecture and could be called a disease-resistant superior variety. But in Sanming Prefecture, these varieties manifested nonresistance, and and in Longxi Prefecture they were between resistant and nonresistant. This shows that the disease resistance of superior varieties is conditional, not "omnipotent." Superior varieties are an important factor in increasing yield, but to allow them to develop their function in increasing yields, they must be combined with superior methods in order to control the disease achieve the goal of high and stable yields.

Five Suggestions To Control Recurrence of an Epidemic of Rice Blast

First, selectively use disease-resistant varieties, rotate the varieties and renew the seeds at fixed intervals. Practice shows that disease-resistant varieties will not be disease-resistant forever; within a specific number of years of planting, the variety will gradually lose its resistance. For example, "keqing3," "zhengshan 97", "zhenglong 13," and "zaiyeqing" all progressed from having a high resistance to

having a low resistance to disease within 3 to 4 years in our province and were finally replaced by other varieties. Today, "red 410", which has contributed greatly to increasing the production of food grains in our province, will complete its historical duty. It will progress from being highly resistant to being nonresistant and will be replaced by other varieties. After inspection and exchange of opinions by the localities, it is preliminarily believed that next year each locality can use other disease-resistant varieties to replace the "red 410": Jianyang Prefecture has the early maturing "guifu 3" and "buluoxian"; intermediate maturing varieties "wenxuanqing," "zuke 2," and "kejing 63-1". Sanming Prefecture has the early maturing "guifu 3," "buluoxian," "zao 29," and "zhengqingzao 1;" the intermediate maturing "zaozai 8," "hongyun 33," "rongnuo 31," "79-44", "kefuhong 2", and "77-175", "kefuhong 2", "hongnuo 31", and zaiyeqingnuo." Longxi Prefecture has the early maturing "longguanghong" and "zhuhongzao 2"; the intermediate maturing "longshuanghong"; and the late maturing varieties "Nanjing 11" and "shanyou 2".

Second, give up the unilateral application of nitrogenous fertilizers and pay attention to increasing the application of potassium fertilizers; these are key measures to controlling the epidemic of rice blast in the northwestern mountain regions of Fujian. The combination of inorganic fertilizers and organic fertilizers and the combination of nitrogenous fertilizers and phosphorous and potassium fertilizers produce visible results in increasing yields and they also control or reduce the occurrence of disease. The plant protection research laboratory of the Jianyang Prefecture Agricultural Science Institute used "red 410" in experiments and showed that "red 410" can grow healthily without becoming diseased by applying 2,500 jin of astragalus per mu and 10 dan of human manure as base manure with a first sidedressing of 15 jin of ammonium carbide and a second sidedressing of 15 jin of ammonium carbide added to 10 jin of potassium chloride. This shows that a combination of organic fertilizers and inorganic fertilizers with the addition of potassium fertilizers can control the occurrence of the disease and can prevent the disease. The plant protection research laboratory of the Longyan Prefecture Agricultural Science Institute used the two varieties, "red 410" and "longguanghong" in the experiment to control the occurrence of disease by increasing the application of potassium fertilizers, and the experiment also showed that this visibly controlled the occurrence of the disease. In the experiment of combining nitrogenous, phosphorous and potassium fertilizers at the superior variety farm of Jiangkou Commune in Jianyang County, it could be seen from the contrast of applying and not applying potassium fertilizers that the application of potassium fertilizers produced visible increases in yield. A commune member of the Yuzhu Brigade of Gaosha Commune in Shaxian did not use ammonium carbide on the shaded mountain ridge fields along the roadside, but used simply kiln ash from the firing of bricks, and the plants did not become diseased but grew very well. These facts show that increasing the application of potassium fertilizers is a key measure. Especially in sandy fields, application of potassium fertilizers produces even more visible results.

Third, treating rice straw to prevent outbreaks should be carried out well in old diseased regions. The facts prove that bacteria of the disease can propagate, spread and cause damage under suitable weather conditions as long as there is a single trace of diseased rice straw remaining, let alone the fact that this year's early season was a year of severe epidemic. Thus, straw in the regions diseased this year must be handled more strictly so that no remnants are left. Many localities have placed great emphasis on this problem, returning straw to the fields, using straw

as fuel, using straw as compost or burning the straw into ashes. This is very good. But some localities have not emphasized this enough, and this is dangerous. Diseased straw must not be piled up anywhere leaving remnants for the disease.

Fourth, disinfection of the seeds should be promoted in a big way; this is an effective measure that is simple and easy to carry out. One method is to soak the seeds in 1 percent lime water. Seeds for the early season can be soaked for 72 hours and seeds for the late season can be soaked for 48 hours. The second method is to soak the seeds in a "401" solution of 500 parts to one or 1,000 parts to one. Seeds for the early season can be soaked for 48 hours and seeds for the late season can be soaked for 36 hours.

Fifth, it is suggested that the supply and marketing departments do a good job of supplying farm chemicals and farm chemical tools, and the farm chemicals that have accumulated for many years and have lost their effectiveness should be handled properly. It is understood that the supply and marketing cooperatives of a few communes sold the farmers EBP left over from the 1950's that had already lost its effectiveness. A popular saying says that treating disease is like fire fighting; it is suggested that the supply and marketing departments carry out an inventory clearance and strengthen leadership in this respect and improve the supply of farm chemicals in a big way.

Breeding Varieties That Are Disease-Resistant Must Be Placed in an Important Position

During this inspection we realized profoundly that although our paddy rice breeding work made definite achievements in the past, such as breeding tall stemmed varieties into short stemmed varieties and breeding short stemmed varieties into hybrid paddy rice, and each step forward served actively in the development of food grain production in our province, nevertheless, because of the development of the situation in agricultural production--raising the level of production and increasing in the amount of fertilizers applied--the broad numbers of farmers have made new demands upon the varieties, and our breeding work can no longer adapt to this situation. At present, our province's agricultural production has brought upon us demands in the five aspects of "early maturity, bumper harvest characteristics, superiority, resistance, adaptability". Especially the problem of "resistance" is more worthy of our attention. This is because if the variety is not disease-resistant or its resistance to disease is not strong, it cannot assure high and stable yields and it will even produce a reduced yield. Therefore, breeding varieties with disease resistance must be placed in an important position to be grasped firmly and well, and we must strive to produce new achievements in the 1980's to adapt to the new demands of agricultural production and the broad number of farmers.

To do the work of breeding disease-resistance well, there are three problems that need to be solved: One is the problem of funds; it is suggested that concerned departments pay attention to the importance of breeding disease-resistant varieties and give appropriate additional funds and care. The second is the problem of guidance; it is suggested that the Scientific Research Department of the provincial Agricultural Sciences Academy coordinate with the provincial Rice and Wheat Institute to do the guidance work well. The third is that cooperative and coordinated work has two difficulties: one is that the distribution of the physiological forms of rice blast disease throughout the province is still not understood, and it is suggested

that the provincial plant protection institute strengthen research to provide a basis for breeding varieties that are disease-resistant. The second is that the parent materials of "disease resistance" are lacking, and it is suggested that the provincial Rice and Wheat Institute fill out and strengthen research in the resources of varieties and the facilities and conditions to provide more and better disease-resistant parent materials for breeding disease-resistant varieties throughout the province.

Breeding work involves the sciences of breeding, cultivation and plant protection. It is complex work. Only by cooperation among multiple disciplines and multiple departments can the steps be hastened so that superior varieties can emerge early to serve production. Each cooperative unit must carry out exchange of experience in breeding in time and communicate technical information to each other and cooperate fully so that achievements can be obtained as quickly as possible.

9296
CSO: 4007/586

BRIEFS

QINGLIU COUNTY SOYBEANS--This year Qingliu County, Fujian Province, has harvested more than 2 million jin of soybeans. This averages 100 jin for each farming household. [OW201145 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 12 Oct 81]

COUNTY TEA PRODUCTION--Fujian's Songxi County has reaped a bumper tea harvest this year, with total output reaching 27,000 dan. By the end of September, the county had sold more than 23,000 dan of tea to the state. [OW141545 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 8 Oct 81]

CSO: 4007/34

MEIXIAM PREFECTURE ACHIEVES BUMPER SUMMER HARVEST

Guangzhou NANFANG RIBAO in Chinese 24 Aug 81 p 1

[Article: "Meixian Prefecture Increases Yield of Summer Harvested Economic Crops on a Large Scale"]

[Text] This year Meixian Prefecture achieved a bumper summer harvest of economic crops. Compared to the same period last year, the yield of summer harvested peanuts of the entire prefecture increased 23 percent, the yield of soybean harvest increased 41 percent, the yield of tobacco harvest increased 1.6 times, and the yield of jute (bluish dogbane) increased 18.6 percent. Spring planted sugar cane generally had a good growth trend, and fruits and agriculture also underwent new development.

This year, Meixian Prefecture conscientiously strengthened and perfected the various production responsibility systems: most of the economic crops were contracted to the family or to the laborer, surplus yields were rewarded, and thus the productive enthusiasm of the masses was effectively mobilized, field management was strengthened, such natural disasters as drought, disease and insect pests and floods were overcome, and the unit area yields increased.

9296
CSO: 4007/581

SEMIANNUAL COMMUNE, BRIGADE ENTERPRISE FIGURES GIVEN

Guangzhou NANFANG RIBAO in Chinese 19 Aug 81 p 1

[Article: "Develop Daily Consumer Products to Suit the Market To Achieve Our Province's Commune and Brigade Enterprises Progress in Wide Strides in Readjustment; Total Income in the First Half Year Increased 27 Percent Over the Same Period Last Year"]

[Text] During the first half of this year, our province's commune and brigade enterprises continued to develop relatively quickly. The total income reached over 2.13 billion yuan, an increase of 27 percent over the same period last year. Of the 13 prefectures and cities of the whole province, 11 realized increased income. Of them, Foshan Prefecture realized an increase of 50 percent; Guangzhou, Zhuhai and Shaoguan cities realized an increase of over 30 percent.

An important reason that our province's commune and brigade enterprises could develop so rapidly is that readjustment work was grasped well, production of daily consumer products was developed in a big way, and suiting the products to market needs was successfully carried out. Foshan Prefecture and Guangzhou, which originally had a heavier ratio of machinery industry, continued to do a good job of readjustment this year and the results were outstanding. In Shunde County, whereas previously the productive value of the machinery industry constituted over one-third of the total, now the ratio of light textile industry constitutes 87 percent. During the first half of this year, the total income of the commune and brigade enterprises of the entire county increased 50 percent over the same period last year. In Fanyu County the proportion of the light textile and clothing industry and the household commodities, hardware and electrical appliances industry constituted 40 percent and 30 percent respectively. Clothing and machine embroidery factories were scattered throughout 24 communes (towns) throughout the county, income from this item alone increased by over 70 percent over the same period last year, and profits increased onefold. Enping County concentrated on cement, floor tile laying and small hydroelectric power enterprises, and developed the superiority of the locality. During the first half of this year, the total income of the commune and brigade enterprises increased over onefold over the same period last year.

Commune and brigade enterprises of many localities continued to do well in joint enterprise, as did joint enterprises of production teams. The number of joint enterprises in Foshan Prefecture increased from over 400 last year to 1,426 enter-

prises. During the first half of this year, in the Guangzhou suburbs over half of the production teams established enterprises. The income of these enterprises increased onefold over the same period last year.

Implementation of special policies and versatile measures have served importantly in the development of our province's commune and brigade enterprises. This year, in the prefectures and cities of Foshan, Guangzhou, Shantou, Shenzhen and Zhuhai, activities involved in producing export products for foreign trade and in the "three incoming materials and one supplement" (processing of incoming materials, processing of incoming samples, assembly of incoming parts, supplementing trade) were lively, and the income increased on a large scale. Zhuhai city increased 23 items of "the three incoming materials and one supplement" during the first half of this year; the total value of processing for export reached over 17 million Hong Kong dollars, an increase of over 30 percent over the same period last year.

9296
CSO: 4007/581

ZHANJIANG PREFECTURE INCREASES PEANUT YIELD 10 PERCENT

Guangzhou NANFANG RIBAO in Chinese 22 Aug 81 p 1

[Article: "Zhanjiang Prefecture's Spring Peanut Yield Increases 10 Percent; Total Yield Reaches Over 179 Million Jin"]

[Text] Last year the yield of spring peanuts in Zhanjiang Prefecture increased by over 42 million jin, and this year increased yields were realized again; the total yield reached over 179 million jin, an increase of 16.49 million jin over the same period last year, an increase of 10.1 percent. The counties and cities producing an increased yield of over 10 percent were Dianbai, Maoming, Xuwen, Lianjiang.

Zhanjiang Prefecture is one of the major peanut-producing regions of our province. Since the beginning of this year, because the policy of rewarded sale for peanuts was good, and with the addition of the popular implementation of the various forms of the production responsibility system at each locality through the entire prefecture, commune members had autonomy over production and the enthusiasm of the masses was effectively mobilized. This year, spring peanuts were planted over 1.164 million mu throughout the prefecture, 130,000 mu more than last year.

9296
CSO: 4007/581

FENGKAI COUNTY INCREASES ROSIN PRODUCTION OVER 90 PERCENT

Guangzhou NANFANG RIBAO in Chinese 20 Aug 81 p 1

[Article: "Fengkai County Completes This Year's Rosin Production Task With Surplus"]

[Text] Zhaoqing--Fengkai County, one of the key rosin producing regions of our province, completed this year's rosin production task as of the 17th of this month, producing a total of 5,724 tons of rosin, an increase of over 90 percent over the same period last year.

This year, each commune and brigade in Fengkai County generally implemented the responsibility system of specialized contracts of rosin gathering; at the same time, the task of producing rosin was assigned to the commune and brigade. Profits for the surplus were returned to the producer, effectively mobilizing the productive enthusiasm of the communes and brigades and the rosin farmers. The number going to the mountains to gather rosin reached over 5,900 people, an increase of over 1,700 over last year. The rosin farmers went into the mountains earlier than previous years and thought of ways to gather more rosin.

9296
CSO: 4007/581

BRIEFS

HAINAN OIL PALM FARM--With the approval of the PRC Foreign Investment Control Commission, Chengmai County overseas Chinese farm has signed a contract with the Singapore South Sea Oil Palm Plantation Company for the joint management of an oil palm farm. Under the guidance of the technical advisors of the Singapore South Sea Oil Palm Plantation Company, the oil palm farm has cultivated a large number of superior oil palm seeds which were introduced from abroad. The preparations for building the oil palm farm are being stepped up. In May last year, at the invitation of the Overseas Chinese Affairs Office of the State Council and the Guangdong Provincial Overseas Chinese Farms Administration Bureau, the Singapore South Sea Oil Palm Plantation Company sent two directors and two technical advisors to come to the region twice to conduct investigation and subsequently decided to invest 30 million dollars in the joint management of the 120,000-mu oil palm farm with Chengmai County overseas Chinese farm. The period of joint management is 25 to 30 years. Oil palm trees will be planted on 600 this year, on 30,000 mu next year and on 120,000 mu in 1985. [HK05115 Haikou Hainan Regional Service in Mandarin 0330 GMT 9 Sep 81]

MOUNTAIN, FOREST RIGHTS--Party committees and people's governments at all levels in Guangdong Province have seriously implemented the decision of the central authorities and the State Council on forestry. Over the past 6 months, 81 counties and communes in 187 mountainous and semimountainous areas in the province have set up trial points for settling mountain and forest rights and implementing forestry production responsibility systems. In the trial points, the ownership of mountains and forests has been fixed, the disputes on mountains and forests have been handled, certificates of mountains and forests have been issued and contracts for forestry production have been concluded and signed. The masses' enthusiasm for afforestation and protection of forests has been further mobilized and the development of forestry production has been promoted. The Provincial Agricultural Committee and the Provincial Forestry Department recently held a forum of the trial points to exchange their experiences. The forum made further arrangements for settling mountain and forest rights and implementing forestry production responsibility systems. [HK051115 Guangzhong Guangdong Provincial Service in Mandarin 2330 GMT 5 Sep 81]

CSO: 4007/34

BRIEFS

AUTONOMOUS PREFECTURE PRODUCTION--The Qiandongnan Autonomous Prefecture has begun to reap paddy rice. The autonomous prefectural CCP committee also decided that without affecting the harvest of late fall crops harvest, the autonomous prefecture must mobilize commune members to cultivate as much wheat, barley, potatoes and broadbeans as possible. The autonomous prefecture has planned to cultivate summer grain over 500,000 mu, 60 percent more than last year; to cultivate rape over 550,000 mu; and to ensure a total output of 80 million jin of rape, 15 percent more than last year. [HK110330 Guiyang Guizhou Provincial Service in Mandarin 2315 GMT 17 Sep 81]

CSO: 4007/34

BRIEFS

XINYI COUNTY WHEAT SOWING--Jiangsu's Xinyi County has sown wheat, barley and naked barley on more than 300,000 mu of land. It plans to sow these crops on 650,000 mu of land. [OW201145 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 9 Oct 81]

CSO: 4007/43

BRIEFS

XINHE COUNTY REWARDS PEASANTS--Xinhe County, Nei Monggol Autonomous Region, has adopted a reward system among peasants who have handed over more grain to the state. According to the county's provisions, peasants who have handed over to the state between 3,000 and 5,000 jin of grain will receive a bicycle or a box of plate glass. Those who have handed over to the state over 5,000 jin of grain will receive a sewing machine or a cubic meter of timber. The county has prepared 330 cubic meters of timber, 156 boxes of plate glass, 182 sewing machines and 156 bicycles. [SK082234 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 7 Oct 81]

JIREM LEAGUE DEVELOPMENT--Jirem League set records in animal husbandry, forestry and agriculture this year. By the end of June, it had 3.37 million head of livestock, an increase of 170,000 head over 1980. This spring, over 710,000 mu of land were afforested, fulfilling 95.5 percent of the annual afforestation plan. The young tree survival rate was over 70 percent. The league's wheat acreage declined by 40,000 mu this year. However, its wheat output was 7.5 percent higher than last year, because per-mu yield of wheat has increased substantially. By the end of August, the league had overfulfilled its annual currency withdrawal target by 13.8 percent and had increased the savings deposits of urban and rural areas by 38.8 percent as compared with the corresponding 1980 period. [SK042140 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 3 Oct 81]

CSO: 4007/34

BRIEFS

WHEAT SOWING--Taian Prefecture, Shandong Province, is engaged in combating drought to sow wheat. As of 28 September, the prefecture as a whole had dispatched some 2.02 million laborers to work on the farms. They had plowed and raked 2.56 million mu of farmland, drained and irrigated 2.14 million mu of land and sown 1.18 million mu of wheat. This prefecture planned to sow 3.5 million mu of wheat in 1981. Laiwu County now has dispatched some 300,000 persons and operated some 4,400 drainage and irrigation machinese daily to work on the farms. By 28 September, this county had sown 198,000 mu of wheat, 61 percent of the wheat sowing plan. [SK031056 Jinan Shandong Provincial Service in Mandarin 2300 GMT 2 Oct 81]

CSO: 4007/34

INCREASED USE OF CHEMICAL FERTILIZERS AIDS PRODUCTION

Hangzhou ZHEJIANG RIBAO in Chinese 28 Jul 81 p 2

[Article: "Our Province's Chemical Fertilizer Industry Can Basically Satisfy Agricultural Needs; It Has Served Greatly to Stimulate Increased Yields in Agriculture"]

[Text] Our province's chemical fertilizer industry has developed rapidly and has served greatly to stimulate increased yields in agriculture. According to comments by concerned departments, the chemical fertilizers needed in our province's food grain production basically depend upon the supply from the province's small chemical fertilizer plants. From 1960 to 1980, the whole province produced a total of over 15.9 million tons of chemical fertilizers; if we calculate on the basis of each jin of chemical fertilizers producing an increased yield of 3 jin, this amount of chemical fertilizers producing an increased yield of 3 jin, this amount of chemical fertilizers produced an increase of a total of over 47 million tons of food grains.

At the beginning of the liberation, our province did not know how to produce chemical fertilizers, which were called "powder to fertilize the fields" and "sacred water" by the farmers. The province relied completely on imports. In 1949, an average of only 0.2 jin of chemical fertilizers was applied per mu of cultivated land in our province. By 1958, it was only 5.4 jin. Because of a lack of fertilizers, for a long time the yield of food grains lingered at about 500 jin and did not increase. After 1958, each locality, city and county of our province insisted on self-reliance and the guideline of hard struggle and established small chemical fertilizer plants with over 30,000 workers. They can produce over 10 chemical fertilizers, including urea, ammonium carbide, ammonium sulfide, calcium superphosphate, and potassium sulfate. In 1980, the annual production of chemical fertilizers amounted to 2.4 million tons, basically satisfying the agricultural production needs of the whole province. Chemical fertilizers have become an important factor in the increased yields of food grains in our province. The small chemical plants at each locality in the province are called by the members of the people's communes in farm villages "our specialized fertilizer accumulation team." Especially after the crushing of the "gang of four," our province's chemical fertilizer industry progressed dramatically, the yield increased on a large sacle, and the level of agricultural application of fertilizers increased greatly. The amount of chemical fertilizers applied per mu of cultivated land throughout the province increased from 4.3 kilograms in 1959 to 89.8 kilograms in 1979; the per mu yield of food grains also correspondingly increased from 610

jin to 1,354 jin. Now, the people's communes in farm villages are also commonly applying chemical fertilizers for tea trees, fruit trees and vegetables, and they are also gradually using chemical fertilizers as the "catalyst" in raising fish and cultivating pearls. Placing a little chemical fertilizer in fish ponds can cause aquatic algae to grow prosperously and can also stimulate the appetite of the fish so that they eat more and grow more quickly. Using urea in combination with feed to feed hogs can stimulate the pigs to grow fat and put on flesh. The widespread use of chemical fertilizers in the farm villages in contributing more and more to the development of our province's agriculture, forestry, livestock production, sideline production and fishery.

9296
CSO: 4007/581

PROVINCE PROCUREMENT PRICE OF SOYBEANS RAISED 50 PERCENT

Hangzhou ZHEJIANG RIBAO in Chinese 2 Aug 81 p 1

[Article: "Procurement Price of Soybeans Is Raised 50 Percent; No Change in Selling Price of Soybeans and Soybean Oil For Supplying People in Cities and Towns"]

[Text] To facilitate mobilizing the enthusiasm of the broad number of farmers to plant and sell soybeans and based on the decision of the State Council, as of 1 August our province's procurement price for soybeans has been raised to the current procurement price for surplus, i.e., from 23 yuan 5 jiao for every 100 shi jin to 35 yuan 5 jiao, an increase of 50 percent. At the same time, the method of added prices for procurement of surplus soybeans is abolished.

While raising the procurement price of soybeans, in order to stabilize the market price and not to add to the burden of life of people in cities and towns, there is no change in the selling price of soybeans and soybean oil, and the portion for circulation, exchange, seeds, rewarded sales, feed and the portion sold to farm villages has the same procurement and selling price.

There is no change in the conversion rate and the policy of rewarded sales for soybeans. When a farmer completes that year's soybean procurement task and has surplus soybeans, he can sell the surplus to the state at the adjusted procurement price; he can also negotiate the price of the sale. The state's food grains department will still negotiate the procurement price for soybeans according to the market, and the price should be slightly lower than the market price. This principle should be grasped.

9296
CSO: 4007/581

INCREASED NUMBER OF RABBITS RAISED BY COMMUNE FAMILIES

Hangzhou ZHEJIANG RIBAO in Chinese 30 Jul 81 p 1

[Article: "Our Province's Key Rabbit-Raising Families Develop Rapidly; During the First Half of the Year, There Were Already Over 40,000 Families Raising an Average of More Than 25 Rabbits"]

[Text] According to statistics of concerned sectors, in the first half of this year, our province's "key families raising rabbits" have already developed to over 43,500 families, while in 1979 such families numbered less than 6,000. Now, the number of rabbits raised by these key families have already reached 1.08 million, constituting about 12 percent of the total number of rabbits being raised throughout the province.

The key families are farm families of the masses that raise more rabbits and that have higher technical experience. They have received assistance and help from concerned departments and have served to provide surrounding commune members with rabbits of superior breed and to teach techniques. These key rabbit raising families now average 25 rabbits per family. About half of the key rabbit raising families have an income from rabbit raising surpassing 300 yuan, including more than 130 families which raise an average of nearly 100 rabbits. Each year they sell several dozen jin of rabbit fur for an income of 1,000 yuan. The young commune member Cai Minglai [5591 2494 0171] of the Hezhong Brigade, Hongwei Commune, Yin County received an income of 1,213 yuan from raising rabbits between January and April of this year, averaging a monthly income of over 300 yuan.

The cases of "key families" becoming rich by raising rabbits are considered very attractive in farm villages. "Grasping the key families will lead the other thousands and ten thousands of families." The number of rabbits raised by commune member families throughout the province has now increased to 8.21 million, constituting over 85 percent of the total number of rabbits in cultivating grounds throughout the province, and 2.74 times the number in 1978.

9296
CSO: 4007/581

PRODUCTION RESPONSIBILITY SYSTEM AT STATE FARMS SUCCESSFUL

Beijing RENMIN RIBAO in Chinese 7 Aug 81 p 1

/Article: "Financial Contracts and the Production Responsibility System Have Mobilized the Enthusiasm of the Broad Number of Workers; the Yunnan State Farm System Turned Losses Into Profits In One Year"/

/Text/ Kunming, 6 August--NCNA reporter Zhang Li /I728 4539/ reports: The 35 state farms of the farming and reclamation system of Yunnan Province have widely implemented financial contracts and established the production responsibility system of "fixed contract rewards." They have mobilized the enthusiasm of the broad ranks of workers and farms. The entire system turned losses into profits in one year. In 1980, rubber, food grains, sugar cane and industrial sideline production all developed greatly, the entire system turned a loss of 18.72 million yuan in 1979 into a profit of 41.12 million yuan.

The state farms in Yunnan Province ate from the "big pot" for a long time in the past. The enthusiasm of the workers could not be developed and many farms suffered losses year after year. Last year, the Yunnan Agricultural Reclamation Bureau implemented financial contracts at the state farms. At the beginning of the year, the bureau headquarters established the indicators of profit and loss for that year on the basis of the actual profit-and-loss situation the previous year of each farm, and ruled that profits surpassing the indicators would all belong to the farm, losses beyond the indicators would not be subsidized, and reduced losses would be given to the farm. The state-operated Dongfeng farm in Xishuangbanna is one of the relatively large rubber plantations of the Yunnan agricultural reclamation system. The headquarters of the Agricultural Reclamation Bureau assigned a profit indicator of 4.5 million yuan for contract work by the farm. After issuing the indicator, the farm assigned the indicator to 15 branch farms in accordance with different situations. Each branch farm assigned the task to the production teams, shifts, units and individuals. Because of contracting the work to each level, the targets were clear, the whole farm from top to bottom had a singular drive to carry out production. At the end of the year, the whole farm realized a profit of 9.45 million yuan, completing the contract plans with a surplus by 110 percent. Last year, after implementing financial contracts, 12 farms of the Yunnan agricultural reclamation system turned losses into profits, the number of units realizing a profit increased from 7 to 19 farms, the profit realized by the entire system increased 64.5 percent over plans. The 16 units suffering losses originally anticipated a loss of 8.01 million yuan, but the actual loss was only 2.16 million yuan.

The Yunnan Agricultural Reclamation Bureau also popularized the experience of establishing a production responsibility system practiced by the state-operated Jinghong farm. In 1979, this farm assigned fixed posts to workers, assigned fixed tasks, assigned fixed measures and demands, established fixed costs, fixed production value and fixed profit-and-loss indicators, and implemented rewards for surplus production. Following implementation of this system, the results were very clear. In that year, a profit of 11 million yuan was realized, making this one of the 10 farms throughout the nation to make a profit of over 10 million yuan. The Agricultural Reclamation Bureau proposed the establishment of a production responsibility system centered around "fixed contract rewards" in each aspect of work and in each profession within the entire system based on the method implemented at the Jinghong farm. It also emphasized that if the responsibility can be assigned to the individual, it should be assigned to the individual as much as possible; all responsibilities that can be assigned to families should be assigned to families. Many farms popularized this experience and realized visible results.

Yunnan is part of our nation's rubber production base. Last year, many farms contracted rubber plantations to forest management workers in plots of 30 to 40 mu per person and established management standards and methods of reward and punishment. Thus, the rubber plantations changed their appearance. The rubber trees were uniform, healthy and strong. Tapping production also implemented the method of "fixed trees and fixed personnel." As a result, dry rubber sheets totaling 17,992 tons were produced, an increase of 18 percent over 1979, and over 91,000 mu of rubber forests were newly planted. This year, up to 20 July, the entire system has already produced 9,865.99 tons of dry rubber sheets, constituting 58 percent of the annual production task. Other economic crops have also realized increased yields.

9296
CSO: 4007/578

AUTHOR: MIAO Guyuan [5379 2654 0954]

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TITLE: "Preliminary Observation of Morphological Indices of Drought Resistance of Wheat"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 7, Jul 81 pp 2-5

ABSTRACT: For the purpose of clarifying the morphological indices of drought resistance in wheat to use as a reference for breeding, cultivation, and increasing the yield of upland wheat, in 1973-74, more than 100 breeds of different types were studied in the upland region of Shanxi. The yield of wheat in that region fluctuates a great deal under the influence of weather; therefore, the yield of a given breed in a given year cannot serve as the drought resistant index and consideration must be given to yield stability under a designed condition of drought. In wheat, high yield and stable yield are definitely two related properties but the two do not always exist simultaneously. In the course of this study, under the upland environmental condition, some plants were sprinkled only once while other were not watered at all to produce yield indices of "normal yield" and "drought yield" respectively. Relationships between the height of stalk, length and slimness of spike, number of tillers and spikes, color and waxiness of leaves, and the shape and beardness of spike to drought resistance were observed, analyzed, and reported.

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TITLE: "Principle of Yearly Variation of Moisture Content of the Upland Soils of Datong City"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 7, Jul 81 pp 9-10

ABSTRACT: The variation of soil moisture content is comprehensively influenced by rain, evaporation, temperature, wind, soil texture, ground cover, and other factors. In 1980, on the basis of the soil moisture content data of 1961-66 of Yanbei Weather Station, the authors carried out periodical measurement of soil moisture at selected points of land belonging to agricultural stations of the 5 communes of Zhaojiaxiaocun, Gudian, Yungang, Xinrong, and Desheng. Results indicate that within a year's time, the soil moisture content in Datong City may be divided into 5 stages: (1) The stage of spring thaw, from early Apr to late Apr; (2) The spring reduction stage from early to late May; (3) The supplementing stage from early Jun to late Sep; (4) The slow reduction stage from early Oct to middle Nov; (5) The relative stability stage from late Nov to late Mar next year. Reasons for these changes are discussed.

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TITLE: "Basic Experience of Upland Wheat Production of Wanrong County"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 7, Jul 81 pp 11-14

ABSTRACT: Wanrong County is in the highland region of Emei Mountains and water is extremely scarce. Every year, 540-580 thousand mu of wheat is planted in the county, amounting to 55 percent of its total cultivated acreage. More than 90 percent of these wheat fields are strictly upland. This year, the wheat harvest is extraordinarily bountiful, reaching 250 jin/mu on the average, amounting to 1.44 times of that of last year. Aside from leaders of various ranks, the production responsibility system, and the timely rain, the authors credit the great success also to scientific cultivation, which is essentially: (1) Reasonable crop rotation and green manure soil enrichment; (2) Planting primarily wheat in summer fallow fields but using the same fields for cotton the year after; (3) Careful plowing and weeding to preserve moisture: (4) Applying a mixture of nitrogen and phosphorus chemical fertilizer initially before planting and to increase the nitrogen-phosporus ratio from the 1 : 0 to 1 : 0.2-0.4 to overcome the serious phosphorus deficiency problem of the soils of the county. (5) Using suitable superior wheat breeds.

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TITLE: "Horizontally Continuous Regionalization Does Not Conform With the Reality of Shanxi"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 7, Jul 81 pp 22-23

ABSTRACT: The objective of agricultural regionalization is to divide land in accordance with the distribution characteristics of natural and social resources to make the arrangement of agricultural production more reasonable for the convenience of management as well as for determining correctly the direction of development. Due to the complexity of agricultural production it is difficult to master all its factors and aspects. The existing regionalization work, therefore, appears to have strayed from its purpose. Some believe a region must be continuous otherwise it cannot be called a region. Some believe there can only be one region of a certain characteristic in a given administrative jurisdiction. In Shanxi, the same natural conditions appear repeatedly here and there to cause a problem with regard to the above 2 definitions of a region. This is the reason why multiples of regionalization work have been completed in the province, but not a single piece of documented material has been produced that has any chance of being seriously implemented. Factors of vertical climatic variations, vertical distribution of animals and plants of the province are discussed to support the author's suggestion of dividing agricultural regions on the basis of elevation to form noncontinuous vertical regions.

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TITLE: "Ecological Analysis of Wild Soybeans of Shanxi Province"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 7, Aug 81 pp 5-9, inside back cover

ABSTRACT: On the basis of an overall observation of the wild soybeans of Shanxi carried out in 1979-80, the Shanxi Provincial Academy of Agricultural Sciences cultivated 200 materials collected from the observational survey for a systematic study of these wild plants. Based upon the annual mean temperature, the accumulated annual temperature, the frost-free period, etc. Shanxi Province may be divided into 6 ecological regions and the ecological types of wild soybeans also vary geographically with the change of the environmental condition in terms of growth period (95 -120 days), the stalk type, the characteristic of the pod, characteristic of the seeds, chemical composition of the seeds (protein content, fatty acid, etc.) These ecological variations of wild soybeans are discussed along with the environmental conditions of the natural habitat of the major types.

6248
CSO: 4009/20

AUTHOR: YOU Mu [3266 3668]

ORG: None

TITLE: "Develop and Utilize Feed Resources of Fujian With All Out Efforts"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 10 Aug 81 pp 3-5

ABSTRACT: Feed is the foundation of animal husbandry. It determines the cost and to a large extent the scale and the speed of development of animal husbandry. For the purpose of resolving the problem of feed, in recent years, attention has been given to utilizing stubbble and vines, liquid and solid residue of sugar cane, using green manure for feed to produce animal manure as fertilizer, growing hydrophytes in all available streams, lakes, and ponds to be used as feed, promoting the use of residue cakes from oil pressing of beans peanuts, rapeseed, etc. for feed instead of fertilizer so as to produce animal manure as fertilizer, processing marine products or their residue into feed, processing wastes of slaughter houses into feed, raising earthworms to process into animal feed protein, raising high protein beans for feed. The author believes that with these methods, the condition of feed deficiency of Fujian Province may soon be overcome.

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TITLE: "Genetics of Glutinousness of Rice and Its Application in Breeding"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 10 Aug 81 pp 5-6

ABSTRACT: Most reports of studies on the genetic principle of glutinousness of rice claim it to be a recessive characteristic controlled by recessive genes while nonglutinousness is claimed to be a dominant characteristic controlled by dominant genes. During hybrid breeding work, the authors discovered that if a nonglutinous rice is used as the female and a glutinous rice the male, the F_o is nonglutinous like the mother. If a glutinous rice is used as the female and a nonglutinous rice the male, the F_o is nonglutinous like the father but some of the F_1 are glutinous and some are nonglutinous. There are even both kinds of grains on a single spike. In F_1 the segregation of nonglutinous and glutinous is in a ratio of 3 : 1. This genetic principle, the authors suggest, may be used to check if the F_o is truly hybrid seeds, to increase glutinousness of hybrids, and to inspect the purity of hybrid seeds.

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TITLE: "Factors Influencing the Purity of Hybrid Rice and Solutions to this Problem"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 10 Aug 81 pp 7-8

ABSTRACT: Since the extension of hybrid rice, due to biological mixing, mechanical mixing, and breed changes, the sterility rate and orderliness of the major sterile lines and the purity of the sterile-free and restorer lines all have had various degrees of segregation, mixing, and degeneration problems. Various causes of these problems and techniques of purifying and rejuvenating the 3 lines of hybrid rice are explained.

AUTHOR: None

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TITLE: "Comparative Experiment of Autumn Soybean Breeds"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 10 Aug 81 pp 19-20

ABSTRACT: For the purpose of developing superior breeds of soybean that are early maturing, high yield, of excellent bean quality, highly resistant to disaster, broadly adaptable, tolerant of late planting, and suitable for the anming District, experiments were conducted in 1979-80 with 12 breeds in a random arrangement of plots of 24 x 4 chi with a 1 chi trench dividing the plots. Each hole is planted with 4-5 seeds to retain 3 seedlings and 18000 plants/mu form the design. The plants are observed for their growth and development period, the height of stalk, the grain test weight, the number of pods per stalk, the disease resistant property, and the yield level. Evaluations of the 12 breeds are reported.

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TITLE: "Prevailing Factors of Blast of Rice and Opinions Concerning Its Prevention and Control"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 10 Aug 81 pp 24-25

ABSTRACT: In Sanming District, blast of rice regularly affects 228.9 thousand mu of paddies, amounting to 5.86 percent of rice acreage. Great epidemics of 1978 and 1980 affected more than 400,000 mu, and about 12 percent of the rice acreage. Factors influencing the prevalence of blast of rice include the breed, the weather, the fertilizer and water management. Following a relatively extensive discussion of each of these factors, the author suggests: (1) Accelerate the propagation of the blast resistant breed Zaozhaiye No 8; (2) Rigorous disinfection of seeds and careful treatment of diseased straw; (3) Establishing 2 sets of superior breeds for periodical rotation and exchange; (4) Establish and improve seed farms to breed, propagate, purify, and invigorate superior breeds; (5) Increase the application of organic fertilizer and emphasize good fertilizer and water management; (6) Rotating different types of pesticides and spray on time.

6168
CSO: 4009/41

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TITLE: "Brief Introduction of Superior Breeds of Winter Wheat in the Southern Provinces"

SOURCE: Beijing NONGYE KEXUE TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 8, 17 Aug 81 pp 6-7

ABSTRACT: Superior breeds of winter wheat in the provinces of Jiangsu, Hubei, and Fujian are briefly introduced: They include Yangmo No 1 (of Yangzhou, medium to late maturing,) Yangmo No 2 (same, early maturing,) Yangmo No 3 (same, early maturing,) 9-10-8-3 (same, poor resistance to cold weather, medium to early maturing,) Wumo No 1 (of Wujin County, early to medium maturing,) Omo No 6 (of Hubei Province, semi-winter, medium maturing,) Jingzhou No 1 (of Jingzhou, high disease resistance especially during wet years,) Fufan 17 (of Fujian Province, early medium maturation, weak tillering,) Jinmo 2148 (of Jinjiang District of Fujian Province, a spring medium maturing breed.) Major characteristics of each of these breeds are described in separate paragraphs in the paper.

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TITLE: "Physiological Effect of Triacontanol on the Growth and Development of Winter Wheat"

SOURCE: Beijing NONGYE KEXUE TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 8, 17 Aug 81 p 3

ABSTRACT: Triacontanol is the highly physiologically active substance isolated by the U.S. horticulturist, S.K. Ries from the dried leaves of alfalfa. It is reported to increase the contents and dry weight of protein and fumaric acid of crops under the condition of darkness. It was introduced to China in 1978. In 1979-80, the authors used winter wheat as the test material for water culture under room temperature to study its effect on the growth and other physiological conditions of winter wheat seedlings. The test was repeated outdoors in the fields of Shuangdao Commune. Results indicate that Triacontanol can increase the grain test weight and unit yield of winter wheat and the effects of 0.1ppm and 0.5ppm are the best. Details of the experiments are reported.

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TITLE: "Several Technical Problems of Autumn Seed Preparation for Hybrid Rice"

SOURCE: Beijing NONGYE KEXUE TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 8, 17 Aug 81 p 15

ABSTRACT: In recent years, the weather has changed frequently and there have been many new composite groupings of hybrid rice. Some technical problems have surfaced with respect to seed preparation in the fall, and many different viewpoints concerning these problems exist. This paper reports the author's opinions cercerning the following problems: (1) Quantity of pollens of the male and the ratio of male and female rows; (2) Method of artificial pollination and number of applications; (3) The substance of the problem of different blooming time of parents and its effect on the fruiting rate of the female. The author provides suggestions with respect to ways of resolving these problems.

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TITLE: "Mixed Application of Compost and Phosphorus Improves the Effect of the Phosphorus Fertilizer"

SOURCE: Beijing NONGYE KEXUE TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 8, 17 Aug 81 p 26

ABSTRACT: Natural humic acid exists widely in soil, stream mud, grass ash, lignite, weathered coal, etc. but it is difficult to dissolve in water in most cases and difficult to be absorbed by plants. If it is combined chemically with potassium, sodium, or ammonium ions, or is added to nitrogen, potassium, phosphorus fertilizers, it can be easily absorbed by plants. Recent studies here and abroad point out that if substance with a high humic acid content is added to phosphorus fertilizer, or if peat of high humic acid content, farm fertilizer, etc. are mixed with fast phosphorus fertilizer before application, the effect of the phosphorus fertilizer may be increased. Results of studies on the subject, chiefly experimental results, carried out at the Beijing University of Agriculture in recent years are reported. Ground phosphorus rock, when it is added to humic acid type materials, does not show the disolvent action, however. Effects of calcium perphosphate, ammonium phosphate, and calcium magnesium phosphorus fertilizer are found to be very obvious.

6168
CSO: 4009/45

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TITLE: "Determination of Vanadium in Water by Graphite Furnace Atomic Absorption Spectrometry"

SOURCE: Beijing HUANJING KEXUE [ENVIRONMENTAL SCIENCE] in Chinese Vol 2 No 4, 30 Aug 81 pp 1-3

ABSTRACT: This paper reports a study on the condition for using BPHA for extracting and concentrating vanadium with the high temperature graphite furnace atomic absorption method. Ordinary ion exchange and solvent extraction methods have been reported by others. Ishizaki et al (TALANTA Vol 26 (1980) p 523) discussed the use of BPHA and its derivatives but concluded that they cannot be used to extract vanadium of the mug level. In view of the fact that BPHA is easily available, the authors carried out this experiment. They found BPHA extraction to be satisfactory in determining the vanadium content in water, waste water, and sea water to the level of 10^{-7} to 10^{-4} g of vanadium per liter of water. Effects of water acidity, BPHA density, and other conditions are discussed.

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TITLE: "Determination of Cobalt in Soil by Graphite Furnace Atomic Absorption Spectrometry"

SOURCE: Beijing HUANJING KEXUE [ENVIRONMENTAL SCIENCE] in Chinese Vol 2 No 4, 30 Aug 81 pp 4-7

ABSTRACT: The use of high temperature graphite furnace atomic absorption method to determine cobalt in soil has been reported before, but extraction is required to improve sensitivity and reduce interference. The use of heat decomposition graphite painted graphite tube can improve sensitivity but its use in determining cobalt has not yet been reported. The authors used the WFD-Y3 atomic absorption spectrometer, a WFX-1 graphite furnace, and a IZ3-100 function recorder to carry out the experiment. Nitric acid and hydrofluoric acid are used to break down and sulfuric acid to smoke the specimen. Lanthanum, calcium, and ascorbic acid are used to eliminate interference, and a deuteron lamp to minimize background absorption to determine cobalt in soil. Results are reported.

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TITLE: "Identification of Beno (k) Fluorathene in Environmental Samples"

SOURCE: Beijing HUANJING KEXUE [ENVIRONMENTAL SCIENCE] in Chinese Vol 2 No 4, 30 Aug 81 pp 7-10

ABSTRACT: Published literature of the past two decades indicate that BkF is an important element of polyaromatic hydrocarbons (PAH) in the atmospheric dust particles, and is also one of the six PAH to be tested in drinking water. Isomers of BkF, including BaP, BbF, and BeP have different carcinogenic action; due to their close chemical property, mutual interference exists during analysis. Its isolation (and identification among the four chemicals) is, therefore, an important and difficult subject in PAH analysis work. This paper reports the work of analyzing the dust and water samples of a certain coking plant in Beijing to isolate and identify 15 major PAH. Most recently synthesized domestic GC-MS and paper chromatographic-fluorimetric method are used. The analysis procedure and result are reported.

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TITLE: "Pol of Diphenol Ether in Soil"

SOURCE: Beijing HUANJING KEXUE [ENVIRONMENTAL SCIENCE] in Chinese Vol 2 No 4, 30 Aug 81 pp 18-21

ABSTRACT: In outh China, mud from the bottom of streams and rivers is regularly dredged and used as fertilizer and through this type of mud the pollutants discharged by some chemical plants enter the fields. Diphenol ether has been rather extensively used in China mainly as a heat carrier. In April 1977, in a certain area of Suzhou, 7500 tons of mud from the canal was used to make a compost and applied in rice paddies. Soon afterwards, seedlings died in massive numbers, and earthworms, eels, etc. which are highly pollutant-resistant, completely disappeared from these paddies. Workers who had had contact with the mud developed a series of symptoms. An analysis disclosed the fact that the mud was highly contaminated by diphenol ether. This paper reports a preliminary study on the duration of retention of diphenol ether in soil and its effects on rice and wheat. Results indicate that the maximum tolerance of the chemical by rice is 25ppm, and 200ppm for wheat. Its retention in soil is about 3 months.

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TITLE: "Problem of Application of Organic Arsenates to Rice Plants in Zhejiang Province and Its Safety in the Field Environment"

SOURCE: Beijing HUANJING KEXUE [ENVIRONMENTAL SCIENCE] in Chinese Vol 2 No 4, 30 Aug 81 pp 29-32

ABSTRACT: In provinces of Jiangsu, Zhejiang, Fujian, Taiwan, etc. zinc methylarsonate (Daojiaoqing)and calcium methylarsonate are frequently and extensively used to control sheath and culm blight of rice (Pellicularia sasakii (shirai) Ito). These insecticides are easily made, highly effective, and very inexpensive, but whether or not they will cause pollution of rice paddies is a problem of extreme concern for many people and opinions vary a great deal on the subject. In the past few years the authors have been studying their distribution in soils and their traces and residues in rice grain. Samples are taken from 10 counties of Zhejiang Province. A comparison of early rice seeds and harvested rice seeds indicates that the residual arsenic content is less than the permissible standard of the state. There is no obvious conclusion regarding their contamination of soil. Continued observation is deemed necessary.

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TITLE: "Effect of Atmospheric Fluoro-contaminants on the Fluorine Content of Vegetables"

SOURCE: Beijing HUANJING KEXUE [ENVIRONMENTAL SCIENCE] in Chinese Vol 2 No 4, 30 Aug 81 pp 41-44

ABSTRACT: Four vegetable-producing areas in the vicinity of the main source of fluoride contaminants are selected for sample study and specimens of two areas, 65 km and 31 km respectively from Baotou Steel and Iron Company, which is the source of fluoride pollution, are used as the control. Results of the study demonstrate that atmospheric fluorides can cause the fluorine content of vegetables to increase but the effect of fluoride-containing irrigation water is less obvious. The fluorine content of vegetables is the highest in the leaves and the lowest in the fruits, and the fluorine content of vegetables is water soluble. Soaking vegetables in water may cause the fluorine content to be reduced considerably.

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TITLE: "Bonded-phase Chromatography in the Determination of Chlorinated Pesticides in Water"

SOURCE: Beijing HUANJING KEXUE [ENVIRONMENTAL SCIENCE] in Chinese Vol 2 No 4, 30 Aug 81 pp 46-50

ABSTRACT: Although gas chromatography has often been used in the analysis of chlorinated pesticide contents in water, some problems remain unresolved. The pesticide content of a water specimen is usually very low and concentration is necessary beforehand. Generally, either an absorbing agent or funnel extraction is adopted for concentration and both are complex and time consuming. Since the bonded-phase technique was proposed by W.Aue in 1973 (J.CHROMATOGR. Vol 77 (1974) p 299) this new stationary phase has attracted increasing attention. This paper reports an experiment testing this technique. After 405 support body is bonded to Carbowax 20 M, the SE-30 stationary phase is smeared on and used to analyse the organic chlorine insecticide content of water. Results indicate that when this bonded-phase is combined with an electron capture detector, 0.005 ppb of insecticide (para α-BHC) in water may be identified.

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TITLE: "Application of Hilbert Space Theory in Comprehensive Assessment of Environmental Pollution Problems"

SOURCE: Beijing HUANJING KEXUE [ENVIRONMENTAL SCIENCE] in Chinese Vol 2 No 4, 30 Aug 81 pp 57-60, 79

ABSTRACT: This paper reports an attempt of applying the Hilbert space theory for a vector analysis mathematical model to derive an index of comprehensive environmental pollution. This model is compared with other models, such as the N.L. Nemerow model, to prove that this model can clearly reflect the contribution of each pollutant and determine the compound action of all pollutants. A sample environment is given to explain that although the content of each pollutant does not exceed the permissible standard by itself, the compound result does exceed the limit allowable and in an environment such as this fish will die.

6248
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TITLE: "A Study on Infection of Anthracnoce on *Cunninghamia lanceolata* (Lamb.) Hook"

SOURCE: Dalian LINYE KEXUE [SCIENTIA SILVAE SINICAE] in Chinese No 3, Aug 81 pp 250-257

TEXT OF ENGLISH ABSTRACT: The pathogen of anthracnose (*Colletotrichum* sp.) on the Chinese fir has a strong saprophytic ability. Residue of tissues affected can provice the source of the pathogen for a long time. The pathogen can directly invade host plants, in addition to wounds. From late spring to early summer, when shoots of the Chinese fir are growing quickly, the infections reach their greatest amount. In seriously affected stands, new shoots are almost entirely attacked.

[Continuation of LINYE KEXUE No 3, Aug 81 pp 250-257]

On part of them symptoms appear in autumn, but most of the affected shoots are diseased in the next spring. The incubation period is more than 10 months. Weak trees are more easily attacked, while strong trees do not appear to have symptoms although the pathogens are in the tissue. Thus, the basic measures to control anthracnose on the Chinese fir include finding a suitable place for planting and taking good care during growth. A determination of the duration of infection provides the scientific basis for fungicidal application.

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TITLE: "A New Method of Vegetative Propagation in *Phyllostachys pubsecens* Mazel ex H. de Lehaie"

SOURCE: Dalian LINYE KEXUE [SCIENTIA SILVAE SINICAE] in Chinese No 3, Aug 81 pp 287-290

TEXT OF ENGLISH ABSTRACT: Treatment of young leaves with 800 to 1200 ppm of ethrel produced clustered secondary shoots on nearly all the nodes. After the removal of the primary leaves, the clustered secondary shoots were buried in soil, while still connected with the mother plant. Four months later, about 50 percent of the clustered secondary shoots bore roots. They could survive when separated from the mother plant. When the secondary shoots were further sprayed twice with 1000 ppm ethrel, the rooting percentage increased to 90 percent, with well developed root systems. Ten months after planting, the secondary shoots tillered two to six times. The bamboo shoots thus obtained reached a height of 50 cm, some even 100 cm.

This new method of propagation has many advantages: It does not need seeds, it is very simple to manipulate and the percentage of survival is high.

9717
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TITLE: "Cytogenetical Study of Homologous Asyndetic Triploid Derived from Anther Culture in Rice"

SOURCE: Beijing YICHUAN XUEBAO [ACTA GENETICA SINICA] in Chinese No 3, Sep 81 pp 262-268

TEXT OF ENGLISH ABSTRACT: Among 23 pollen plants of the first generation derived from intercultivar hybrid of rice, two plants of homologous asyndetic triploid were discovered. This paper might be the first one reporting homologous asyndetic triploid in rice, especially those derived from anther culture. From cytogenetic study of meiosis of these triploids, there has not been found chromosome pairing in diplotene, diakinesis and metaphase I. Thirty-six univalents are represented. Whether or not the chromosomes before diplotene are in pairs was not observed. The distribution of lagging chromosomes is continuative in anaphase I.

The other abnormal phenomena in meiosis are:
1) Monstrositas (abnormality) of spindle. Its appearance in morphology is:

[Continuation of YICHUAN XUEBAO No 3, Sep 81 pp 262-268]

divergent spindle in "V" shape, curved spindle in "C" shape or poly-pole spindle. In a number of spindles they appear as poly-spindles.
2) Syncytium to be made up from 2 to more than 10 PMCs.
3) Tetrad division.
4) Abnormal microspore (from monoads to octoads) in the tetrad stage.

These two triploids may be considered asyndetic because the evidence of non-pairing chromosomes has not yet been obtained before diplotene. The origin of the asyndetic gene of these two asyndetic triploids might be traced to be: (1) recessive mutation, (2) dominant mutation and (3) asyndetic gene segregated from hybrid F_1 pollen. The authors consider the first assumption to be predominant.

The role of the asyndetic gene in homologous conditions is discussed by comparing these two homologous triploids with meiosis of the three base-allotriploid in *Oryza* that is "(*Oryza sativa* (AA) x *O. latifolia* (CC DD)" hybrid F_1 (ACD) and "(*O. sativa* (AA) x *O. minuta* (BBCC)" hybrid F_1 (ABC).

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TITLE: "A Study of Embryogenesis in Pollen Callus of Maize (*Zea mays* L.)"

SOURCE: Beijing YICHUAN XUEBAO [ACTA GENETICA SINICA] in Chinese No 3, Sep 81 pp 269-274

TEXT OF ENGLISH ABSTRACT: In anther culture of maize, we have obtained a pollen callus from an anther of Var. Batangbai. After subculturing several times, the callus continually gives rise to a lot of embryoids, some of which later grow into plantlets. This capacity of embryoid formation has been maintained by subcultures up to 24 times in two years. A cytological and histological study was carried out and the results revealed that on the whole the developmental process of embryoids is similar to that of zygotic embryos, but with the former some have changed their morphological features, which would be related to the initiation and location of the embryogenic cells. The development of embryoids is not synchronous, therefore the different stages of embryoids, from single embryogenic cells, two to eight cellular embryoids, multicellular ones to mature embryoids, can be observed in the same callus. Thus it is shown that embryoids could be originated from single

[Continuation of YICHUAN XUEBAO No 3, Sep 81 pp 269-274]

cells. The examination of the chromosome numbers of root tips of the plantlets indicates that the embryoids and callus may be haploid so that the ploidy lever is relatively stable *in vitro* culture for such a long time that a haploid embryogenic clone of maize can be established. The clone will be useful for the research of theoretical and practical problems in the improvement of maize.

9717
CSO: 4009/38

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TITLE: "A Study on DIMBOA of Corn--Factors Influencing the DIMBOA Contents and Detection Techniques"

SOURCE: Tianjin ZHIWU BAOHU [PLANT PROTECTION] in Chinese No 4, 8 Aug 81 pp 2-4

ABSTRACT: Starting from the fifties, research on DIMBOA of corn has had a history of more than 2 decades. DIMBOA is a biochemical substance of corn with which it resists many diseases and pests; therefore, it may be used as a biochemical index to identify the adversity resistance of a breed of corn. The DIMBOA content of corn changes under the influence of many factors. Its reduction or loss in some inbred lines has been regularly observed as one of the chief reasons for its loss of disease and pest resistance, yet under a suitable environment with improved nitrogen nutrition, the DIMBOA content of an inbred line may be promoted to increase so as to increase its resistance. This paper introduces the nature of DIMBOA of corn and a technique, which is a revision and improvement of LONG's technique as reported in 1975, to determine the DIMBOA content of corn. Effects of freezing and thawing of corn tissues on the test result are discussed.

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TITLE: "Problems of Infections of Wheat and Corn by Cotton Wilt Pathogens"

SOURCE: Tianjin ZHIWU BAOHU [PLANT PROTECTION] in Chinese No 4, 8 Aug 81 pp 33-34

ABSTRACT: Early reports of studies on cotton wilt pathogens (Fusarium oxysporum f. vasinfectum, and Verticillium albo-atrum) indicated that these pathogens have a narrow range of hosts, limited to cotton, high mallow, and autumn mallow. In recent years, many scientists of the field believe their hosts include a broad range of plants. Many of these hosts are carriers without obvious symptoms. The authors of this paper carried out experiments in 1978 and in 1979 to test their ability to infect wheat and corn. With 100 cotton plants as the control, the pathogen specimens successfully wilt diseases in cotton but failed to produced any wilt symptom or pathogens in either wheat or corn. This result is contrary to other reports on the subject. Whether the different experimental results are due to a difference in the physiological types of the pathogens used is a problem in need of further study.

6168
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END

JPRS 79347

2 November 1981

China Report

AGRICULTURE

No. 171

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JPRS 79347

2 November 1981

CHINA REPORT

AGRICULTURE

No. 171

CONTENTS

I. GENERAL INFORMATION

National

'BANYUETAN' Discusses New Leadership Styles in Agriculture
(BANYUETAN, 25 Jul 81) 1

Change in Management Style, by Xu Baobin
Duties of Management Committee
Follow Up on Contracts, by Fang Xiangming

Democratic Management of State Farms Urged
(ZHONGGUO NONGKEN, 24 Aug 81) 5

Need To Boost Commodity Economy in Agriculture Discussed
(Chen Sheng; NONGGUN GONGZUO TONGXUN, Aug 81) 8

Expanding Contract System for Scientific Farming Emphasized
(Zhou Changnian; BANYUETAN, 25 Jul 81) 12

Selection of Responsibility System by Masses Urged
(Zhu Peiwei, Li Changjie; NONGYE JIXIE, Aug 81) 14

Changes in Suzhou's Rural Economic Structure as National Rural Microcosm
(Chen Lein; NONGYE JINGJI WENTI, Aug 81) 19

Institute of Plant Protection Described
(KEXUE ZHONGTIAN, Aug 81) 32

Socialist Purity of Individual Household Production Contracts Defended
(Lu Xueyi; NONGCUN GONGZUO TONGXU, Aug 81) 34

Criteria for Evaluating Farm Production Effectiveness Evaluated
(Zhou Cheng, Liu Tiangu; NONGYE JINGJI WENTI, Aug 81) 40

Unified Administration, Remuneration Linked To Output Explained Further
(NONGCUN GONGZUO TONGXUN, Aug 81) 44

Beijing

Beijing Experiencing Serious Water Shortage
(BEIJING RIBAO, 18, 28 Aug 81) 49

Conservation Emphasized, by Zhang Qin
Shortage Worsening

Fujian

Active Measures Urged To Prevent Cold Damage to Crops
(FUJIAN RIBAO, 20 Aug 81) 53

Prevention, Control of Disease, Insects in Late Rice Urged
(FUJIAN RIBAO, 28 Aug 81) 56

Longxi Prefecture Overfulfills Food Grain Procurement Task
(FUJIAN RIBAO, 23 Aug 81) 59

Bumper Harvest of Pineapple Anticipated
(Li Jinhe; FUJIAN RIBAO, 23 Aug 81) 60

Hebei

Intention To Expand Cotton Area in 1982 Discussed
(HEBEI RIBAO, 15 Sep 81) 61

Shenqiu County Reports Bumper Wheat Harvest
(GUANGMING RIBAO, 26 Jul 81) 64

Development of Province's Fishery Resources Emphasized
(Qiu Zhiquan; HUBEI RIBAO, 16 Aug 81) 66

Briefs
Tobacco Industry Growth 70

Jiangsu

Spring, Summer Bumper Tea Harvests Reported
(Su Cha; XINHUA RIBAO, 16 Aug 81) 71

Briefs
Marten Production 73

Shandong

Provincial Government Returns Land to Production Units
(DAZHONG RIBAO, 16 Aug 81) 74

Shanghai

Experiments With Late Geng Rice Varieties Reported
(Lu Zhenqing; SHANGHAI NONGYE KEJI, 5 Aug 81) 76

Xinjiang

Improvement in Quantity, Quality of Xinjiang Industrial Goods Discussed
(Fu Biduo; ZHONGGUO NONGKEN, 24 Aug 81) 81

Yunnan

Deputy Governor on Importance of Agricultural Science
(Ma Wendong; YUNNAN RIBAO, 19 Aug 81) 84

State Farm Management System Reform Achieves Good Results
(YUNNAN RIBAO, 14 Aug 81) 87

Poor State of Tea Groves, Low Tea Production Reported
(Tu Xianzhang, Ma Zhaoming; YUNNAN RIBAO, 16 Sep 81) 91

Semi-Annual Dried Rubber Statistics Reported
(ZHONGGUO NONGKEN, 24 Aug 81) 93

Zhejiang

Problems and Possible Solutions in System of Responsibility Illustrated
(Zhang Lingkai; ZHEJIANG RIBAO, 17 Sep 81) 94

Greater Cadre Efforts on System of Responsibility During Coming Year Urged
(ZHEJIANG RIBAO, 17 Sep 81) 97

Provincial Report on 1982 Rape, Wheat Plans Published
(Fu Cong; ZHEJIANG RIBAO, 18 Sep 81)..... 100

Jiaxing City Achieves Surplus in Food Grain Procurement
(ZHEJIANG RIBAO, 30 Aug 81) 101

I. GENERAL INFORMATION

'BANYUETAN' DISCUSSES NEW LEADERSHIP STYLES IN AGRICULTURE

Change in Management Style

Beijing BANYUETAN in Chinese No 14, 25 Jul 81 p 10

[Article by Xu Baobin [1776 1405 2430] of the Fuyu Commune in Sheyang County, Jiangsu: "New Situation in the Farm Villages; New Method of Leadership"]

[Text] Editor: After implementing the various form of responsibility system of accounting wages in joint production, how production should be adapted to the new leadership situation and how the function of the cadres in production teams can be developed are very important and practical problems encountered in farm village work at present. The articles printed in this publication present some opinions and views on this problem. We hope that comrades engaged in farm village work will conscientiously study this problem and pay attention to summarizing the experience in this respect.

The Heart and Mind Can Relax but Work Cannot Be Relaxed

We have now popularly implemented the joint production responsibility system with regard to the laborer and have contracted jobs to professionals here, and we have realized notable results. But a few cadres believe that "joint production with regard to the laborer enables the cadres to take it easy," and that "when the contract is signed, half of the job is done." As the heart and mind relax, work is relaxed.

After the responsibility system has been soundly established, cadres no longer need to push for harvest and for sowing, punch the clock and blow the whistle every day as before. In this regard, they indeed have it easier. But after implementation of the responsibility system, many new problems and new situations emerge; there is still a massive amount of hard and detailed work that we have to do. For example, we must uniformly establish the production plan, inspect the execution of the responsibility system, supervise financial records, do the work of year-end distribution well, assure that the contracted work is delivered as stipulated, and we must grasp well the implementation of measures to increase yeild, popularize agricultural technology, and guide scientific planting. We must adjust the imbalance in the schedule of the specialized groups when they are busy and when they have free time. When the contracting laborer cannot complete the task because of illness or personal business, readjustment must be made in time under the principle of

mutual help and mutual benefit. We must conscientiously carry out well the management, arrangement and use of agricultural machinery and tools and draft animals, and do a good job of supplying production information. When faced with natural disasters that cannot be resisted by the group or the individual, unified action must be organized to cooperate and exert efforts to avoid or reduce damage. We must strengthen political and ideological work, praise the advanced, grasp the backward, lead the whole, etc.

It can thus be seen that after the responsibility system is implemented, the cadres have lighter duties in some ways, but in other respects their burden has become heavier and the demands are even higher. Cadres are public servants of the people, they serve the people; we must never relax our own work, we should improve our work in accordance with the new situation and continuously solve new problems to carry out the responsibility system better and to make the farm village economy more prosperous.

Duties of Management Committee

Beijing BANYUETAN in Chinese No 14 25 Jul 81 p 11

[Article taken from the directive of the Guizhou provincial committee on continuing leadership by the farm village production team: "Duties of the Production Team Management Committee"]

[Text] The management committee of the production teams which assigns cadres to families on a contract basis should continue to exercise leadership authority and duties. For those production teams that do not have a management committee or whose management committee is not sound, the commune members should meet to elect a committee democratically and should soundly establish such a committee as quickly as possible. The main duties of the production team management committee are as follows:

1. Propagandize and implement the various guidelines, policies and laws of the party and government, do a good job of ideological and political work among the masses.

2. Maintain the system of public ownership of basic information, stop and correct activities that violate the public property of the commune brigades.

3. Manage the production of the whole team, develop diversification, promote agricultural science and technology, and organize capital construction in agriculture within the capabilities of the production team.

4. Guide the signing of work contracts, inspect implementation of contracts, and assure that the contracts are fulfilled. Complete the tasks of unified procurement and assigned procurement by the state for agricultural sideline products. Do a good job of collecting, managing and using the portion of products kept by the collective.

5. Do the work of taking care of the families needing special assistance, the five protected families of veteran families and families in difficulty, and establish the necessary public welfare services in education, public health and culture.

6. Organize mutual cooperation and new joint economic ventures in labor production according to the principle of voluntariness and mutual benefit.

7. Do the work of planned parenthood well, strictly control population increases.

8. Lead in the establishment of team regulations and civilian rules, mediate in civilian disputes, and maintain social order.

9. Inspect, examine and compile statistics on the yield and on the income of farm families; provide the various statistics accurately.

10. Perform other work and tasks assigned by the higher authorities and commissioned by the operations departments.

Follow Up on Contracts

Beijing BANYUETAN in Chinese No 14, 25 Jul 81 p 12

[Article by Fang Xiangming [2455 0686 2494] of the Hongan County Chinese Communist Party Committee of Hubei Province: "Signed Contracts Must Be Followed Up"]

[Text] In the spring of last year, a commune member in our county signed a contract with the production team to contract for the cultivation of 10,000 fish for the sum of 2,000 yuan. It was agreed that the account would be tallied with full reward and full compensation. The cadres of the team considered that since the "contract was signed," "everything would be well" and they abandoned leadership of fish cultivation. This commune member did not exert efforts to cultivate fish but went out to "herd cattle" and sold draft cattle. Commune members complained, but the cadres of the production team said that since the work had been contracted, he had to bear the economic responsibility and they should not interfere. As a result, at the end of the year when the tally was taken, not many fish were produced, and there was a loss of over 1,600 yuan. Commune members did not have any fish to eat, the collective did not have the money to fulfill the contract, and the commune member who had contracted to raise the fish became a "debtor."

Such incidents of caring only about signing contracts and abandoning the leadership responsibility are not unique. Some production teams and operating groups, professional families and professional individuals sign contracts for production and are enthusiastic about "kicking all," "cutting it with one blow," "making a one-strike deal." After signing the contract, the cadres of the production teams promptly forget about the contracts. As a result, some contracts are completed well and some contracts are not fulfilled. The contractor is punished, but the production team still suffers losses.

Conversely, the cadres at each level of the Taohua administrative region of Yonghe Commune in Hongan County paid a lot of attention to strengthening the leadership in the responsibility system of contracted work. They believe that contracts are not the "magic medicine" of "natural encouragement" for the commune members. Signing a contract for production is only grasping one aspect of mobilizing the productive enthusiasm of the commune members. Whether or not the enthusiasm of the commune members can be fully developed and maintained, their efforts still cannot be separated from our leadership and our strong ideological and political work. Since the

beginning of spring, the cadres have further strengthened leadership in the responsibility system of contracting for production: 1) They concentrated on ideological and political work, helped commune members overcome all kinds of thoughts and emotions of hoping for luck and fearing difficulties, and helped establish confidence in fulfilling the contracts and in being rewarded for producing a surplus. 2) They carried out inspection and supervision of the execution of contracts by the contractors in stages, praised the advanced ones, and helped the backward to catch up. 3) They propagandized and popularized the science and technology of agricultural production to the contractors, and helped the contractors to implement measures to increase yields. 4) They carefully studied the new situation, new problems in production contracted by professionals, and helped the contractors to strike at the weak links, defeat various difficulties and promote balanced increases. As a result, the various tasks contracted in this administrative region were all executed very well.

9296
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DEMOCRATIC MANAGEMENT OF STATE FARMS URGED

Beijing ZHONGGUO NONGKEN [STATE FARMS AND LAND RECLAMATION IN CHINA] in Chinese No 8, 24 Aug 81

[Article by Commentator: "Actively Promote Democratic Management in State Farms"]

[Text] The CCP Central Committee and the State Council have issued notices to all regions and all departments throughout the country requiring preparatory establishment of a staff and workers congress system in accordance with "Temporary Regulations on State Industrial Enterprises Staff and Workers Congresses." This "Regulation" pertains, in principle, to state farms.

Proper operation of state farms must be done in accordance with natural laws and economic laws, and by striving for results through experience in order to steadily increase the productive capacity of farms and increase output of products. It is necessary at the same time to implement policies set by the central government in a seeking of truth from facts in order to arouse the initiative of cadres and workers. The shift in work emphasis to economic construction decided upon by the Third Plenary Session of the 11th Party Central Committee and the decisions it made on a series of policies have played a tremendous role in giving impetus to activities in all quarters. On state farms, implementation of financial contracting for work and institution of a system of responsibility for production, which have aroused the initiative of cadres and staff and employees alike for a good situation in production and a good political situation on farms have all been good.

In view of the good situation on farms, democratic management of farms has also progressed. We are all aware that ours is a socialist country, and that in socialist countries, cadres and workers should have a sense of responsibility about being masters of their own affairs. Each individual should participate in and be concerned about major national affairs. In regard to the major affairs in their own work units, in particular, they should have the right to speak out, and the right to vote on all major matters. Naturally the right to vote on major matters can be exercised only under the programs and policies set by the Central Committee, and there can be no deviation from this. However, in the implementation within a unit of programs and policies set by the Central Committee, inasmuch as circumstances differ, action must be taken in accordance with the realities and matters worked out. There can be differences in views of one kind of another, but ideas must be unified on these different views, and kept in step so that production and work will achieve greater effectiveness. Attainment of this goal is possible only through full democratic discussion; there are no other ways. Such other ways are individual arbitrariness that is separated from the masses and from which no good results can ensue.

In any task there is always the question of what forms to adopt, and democratic management of farms is no exception. Current practice has shown that the exercise within enterprises under the leadership of CCP committees of the staff and workers congresses or staff and workers system prescribed by the Central Committee are a good form for instituting democratic management. A farm can convene a staff and workers congress, and a production team or small unit can convene a staff and workers meeting. On the basis of current experience, if such a conference is to be successful, the problems to be discussed should be how to carry out the production or work of a farm or a production team, and linking good performance in work and production to the personal welfare of cadres and workers, which is a correct expression of the benefit relationships of the state, the collective and the individual. Democratic discussion is exactly for the purpose of correctly dealing with the benefit relationships of these three. To be concerned with benefits for the state without linking them to the individual benefits of staff and workers makes for difficulties in arousing greater concern on the part of staff and workers. In the implementation of a system of responsibility for production, discussion of the linking of remuneration to production, or the calculation of rewards on the basis of production was very conscientious. Therefore, democratic management must also be related to the individual welfare of staff and workers so that democratic management will not end up becoming nothing but a form.

For individual farms, when a staff and workers congress is convened, farm planning, and ways of rewarding fulfillment and overfulfillment of quotas should be discussed. Since fulfillment or no fulfillment of quotas is closely associated with the individual welfare of staff and workers, this cannot but make staff and workers be concerned about cadre abilities and their work attitude. Consequently, democratic management must inevitably produce questions from staff and workers about the selection of cadres. This will be the general trend of events. Right now numerous cadres in production teams or cadres in industrial sideline units directly subordinate to farms are elected by staff and workers. As yet, staff and employees do not directly elect the farm manager of large farms, and this is because of the fairly concrete implementation of a system of responsibility in production teams or industrial sideline units directly subordinate to farms. This is only the situation at the moment. With the gradual institution of systems of responsibility, and the working out of the top echelon of the farms, farm leadership cadres can also be elected. Our democratic management is done from top to bottom, but actual implementation is given impetus from bottom to top.

Election of cadres by staff and workers should solve some problems of understanding among cadres, and should solve some problems of understanding for staff and workers too. Among cadres, there are several worries. There is the worry that there are no long range plans for elected cadres, and that concern is solely with raising current production with no adequate consideration for later on. There is the worry that elected cadres will feel that they have been elected by staff and workers and will consequently onesidedly favor the demands of staff and workers, listening to the lower levels but paying no heed to upper levels to become a tail of the backward masses. There is fear that among the masses there exist factional, sectarian, and hometown notions and that unqualified people may thus be elected. These worries are not concerns with "groundless fears," but something that may occur in actual work. So the election of the kind of person to be a leader must undergo thorough discussion by staff and workers, and several requirements set, so that the cadre elected will have

some thoughts about how to do the work, and so that the staff and workers who supervise the cadre will have some thoughts as to how he should do his work well. Among staff and workers, provided a system of responsibility is in place, and the methods of being rewarded clear, there should be no unconcern when problems crop up or feelings that it doesn't matter who is elected because I have to work just the same. Even if they do their work well, elected cadres may turn out not to be ideal. The person elected may have been elected without a full realization of his shortcomings. Once elected, he may form a small coterie or seek private gain. When such situations occur, the staff and workers will rapidly discover them and hold new elections. In a brickyard at one farm, just such a situation arose and the elected cadre was recalled 3 months later. The staff and workers meeting conducted an impartial examination, superintending, and evaluating and comparing the elected person's work, and believed the masses.

Democratic management of farms will gradually be perfected so long as production steadily develops and the livelihood of staff and workers steadily improves. When these two conditions are departed from, democratic management may then become an empty form. In the active promotion of democratic farm management, obstacles in the form of "leftist" or rightist mentality may be encountered, and problems should then be solved on the basis of the actual situation. Of particular importance is the summarization of actual work experiences in order to increase the level of cadre and worker understanding, and to gradually perfect the important system for running farms that democratic management is.

9432
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NEED TO BOOST COMMODITY ECONOMY IN AGRICULTURE DISCUSSED

Beijing NONGGUN GONGZUO TONGXUN /RURAL WORK NEWSLETTER/ in Chinese No 8, Aug 81 pp 26-27

/Article by Chen Sheng /7115 0581/, Jiangsu Provincial Agricultural Committee: "Correct the Guiding Ideology of Agricultural Economic Management"/

/Text/ Conspicuous problems in agricultural production are large expenses, high costs, and poor economic benefits. The fundamental reason for this state of affairs is the existence of lopsidedness and subjectivism in the guidance of agricultural production under the influence of erroneous leftist ideology. One of the lopsidednesses is simple pursuit of production quotas without being able to see the dialectic relationship between output and cost, or output and economic benefits. The source of this lopsided thinking lies in the natural economic concepts of small producers.

For a long time, most of our attention has been concentrated on the limited amount of cultivated land, and virtually all of the cultivated land has been devoted to grain crops, with the emphasis in grain being pursuit of high output quotas, employing use value to satisfy increasing needs in providing food and shelter for the populace and for construction. Development of agricultural production was not treated as development of socialist commodity production. The agricultural economy was looked upon as though value and use value were one and the same, while the natural economic viewpoints of small producers continued to guide agricultural production.

China is essentially a country with a large population in which production methods are outmoded and the natural economy is dominant. In the historical process of transformation toward development of a socialist commodity economy, natural economy concepts have a profound social foundation. Under the natural economic conditions of self-sufficiency that have existed historically, the expenses for materials used in production by peasants engaged in handicraft labor was not of great economic significance in the products. The main concern of the producers was ability to produce a certain quantity of goods through their own labor in the course of a year or a season. So long as they were able to replace the materials consumed in each production cycle, that was enough (for then further production could be carried out). There was no need for replacement of value. Since agricultural production is subject to the limitations of natural conditions and soil fertility, under backward production conditions, how much product will be produced will depend, to a very great degree, on the kindness of nature, and will not entirely be decided by the degree of exertion by the laborer. Under these economic conditions, all the producer can do is to seek the highest possible output from a fixed area of cultivated land, or through increasing

the size of cultivated land to seek greater output. The sole object of production is the use value of products to meet the needs of the worker himself and of his family in having shelter and sufficient to eat. Under such conditions, producers only have an outlook on quantity of goods (use value); they can only generate a natural economy concept, and cannot generate a conception of systematic costs, profits, and economic benefits in the category of a commodity economy. China has already established a socialist system in which a commodity economy has been developed to a certain extent. Although history has already generated profound and great changes, the natural economy concept continues to influence the brains of a substantial number of our comrades.

Since the founding of the People's Republic, substantial development has taken place in the socialist commodity economy. Looked at it in terms of the commodity rate of agricultural production, though not great, statistics show the monetary value of agricultural products purchased in 1978 by the country's commerce, foreign trade, and food sectors to have been 46 billion yuan, which was only 31.5 percent of the 145.9 billion total output value of agriculture for the same year. In 1980, it was 41.9 percent, about 73 percent of grain production being consumed to supply the peasants themselves, 22 percent being sold to the state; and 5 percent being sold in country fairs. However, one positively should not reach the conclusion that China's agricultural economy is still fundamentally a self-sufficient type economy. In judging the nature of the agricultural economy at the present stage, one positively should not look only at the commodity rate, but rather make an analysis relating all socio-economic factors. The socialist commodity economy of China's industry has developed rather fully, and socialist commerce under the ownership of all the people and the collective has penetrated into the farflung rural villages. In terms of agriculture itself, an analysis of Jiangsu Province's situation in 1980 shows: (1) Agricultural production expenses that were commodity expenditures amounted to about 60 percent; most of the means of agricultural production were commodities purchased from elsewhere; (2) Of total agricultural income, income from the sale of agricultural by-products amounted to 34.7 percent, and accounted for 33.7 percent of the total cash distributions to commune members. This means that commune members earnings from the sale of commodities exceeded one-third of their total distributions. Looked at in terms of this tendency, increases in future income distributions to commune members will be determined by increase in earnings from the sale of commodities. (3) Within agriculture and basic accounting units, not only are there different degrees of a division labor in farming, forestry, animal husbandry, sideline occupations, fisheries, industry, and commerce, but also within the farming industry there is a certain degree of a division of labor between grain crops and diverse economic crops. This division of labor is still very unbalanced in different areas, and the extent of the division of labor is not complete, socialized, or specialized. However, the differences in labor productivity occassioned by this division of labor, as well as different prices prevailing for various goods, have brought about differences in the extent of benefits. This will provide great impetus and attraction for future development of division of labor, and for opening up of markets, especially in areas and units in which division of labor is not yet developed. Consequently, China's agricultural economy is already fundamentally in the category of a socialist commodity economy, having made the transition to a socialist commodity economy from a self-sufficient or semi self-sufficient natural economy. Of course, such a commodity economy is still not well developed, but developed and undeveloped are simply differences in degree, and quantitative differences that cannot change the character of the socialist commodity economy of Chinese agriculture. Therefore the natural economy conception in which costs are not

calculated and economic benefits are not questioned is alien to the realities of China's agricultural economy, and it is a deviation from the objective requirements for development of a socialist commodity economy. It stifles the initiatives of the peasants to produce commodities and has already become, and is more and more becoming, the greatest ideological obstacle to development of a commodity economy in agriculture. It is the ideological source causing the not very high economic benefits from agricultural production, for which reason it must be conscientiously overcome. We must guide agricultural production in accordance with the objective needs of developing a socialist commodity economy, applying the management methods of a commodity economy, and borrowing a series of scientific categories from the commodity economy for use in management and accounting, giving full attention to the costs, profits, and economic benefits of agricultural production so as to gradually increase labor productivity in agriculture. We should do this in order to create constantly increasing social wealth, to improve the peasants' livelihood with all possible speed, and to accumulate the capital needed for the modernization of agriculture. It may be said that without making a commodity economy of the agricultural economy, there can be no modernization of agriculture.

2. In the development of a commodity economy within agriculture in accordance with objective needs, how should we regard the relationship between output and costs, and between output and economic benefits? By so-called costs is meant total expenses for materials consumed plus the expenditure of manpower by production units in producing commodities. Cost accounting requires a maximum quantity of product for the least expenditure of labor in order to derive the maximum economic benefit. The mutual relationship of output, costs, and economic benefits is generally manifested in the following several ways: (1) When costs per mu are fixed, the higher the output, the lower the costs per jin, and the higher the economic benefit. Conversely, the lower the output, the higher the costs per jin, and the lower the economic benefit. This is a relationship of costs per invariable mu and variable output. (2) Output is constant, but owing to savings in the use of the means of production and increases in labor productivity, per mu costs decline; per jin costs decline along with them, and economic benefits rise. Conversely, when no increase in output occurs yet costs per mu and costs per jin increase, economic benefits decline. This is the relationship between a stable output and variable costs. (3) When output increases and costs correspondingly increase, but increase in quantity of output is greater than the amount of increase in costs, per jin costs still fall and economic benefits rise. Conversely when the amount of increase in costs is greater than the amount of increase in output, despite the increase in output, costs per jin rise and economic benefits fall. This is the relationship of both changing amounts of output and costs. (4) Agricultural production is controlled both by economic laws and by natural laws. In considering the relationship between out and costs, it is also necessary to deal with the relationship between current economic benefits and long term economic benefits, and that means both making full use of natural resources and affording reasonable protection to natural resources, both use and nurture of the cultivated land, both taking and restoring. In consuming soil fertility, it is also necessary to build soil fertility. One cannot plunder. Only in this way is it possible both to increase current economic benefits and to insure longterm economic benefits. (5) In considering the relationship between output and costs, one should not limit oneself solely to one variety of thing; it is necessary both to seek to develop grain production and to vigorously develop diversification as well so that abundant workforce resources and natural resources attain full and rational use to increase macroscopic economic benefits.

From this it may be seen that the mutual relationship between output and costs, and between output and economic benefits are mutually restrictive. We must free ourselves from the natural economic concept that is divorced from China's economic development realities, overcome lopsidedness in solely seeking output, make the commodity economy the guiding ideology in agricultural management for the vigorous development of agriculture, and dialectically master the relationship between output and costs as the only way to blaze a road to increase economic benefits in the microeconomy and macroeconomy of agricultural production.

9432
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EXPANDING CONTRACT SYSTEM FOR SCIENTIFIC FARMING EMPHASIZED

Beijing BANYUETAN in Chinese No 14, 25 Jul 81 pp 26-27

[Article by Zhou Changnian [0719 7022 1628]: "'Contract System for Scientific Farming' That Is Worth Popularizing"]

[Text] The Chunwan Commune of Yangchun County in Guangdong Province has an advanced model in scientific farming--the Sanjie production team. For 18 years, the paddy rice planted by this team has always produced high and stable yields and the cost has been low. For example, in 1979 the yield of paddy rice per mu (early and late seasons) reached over 1,920 jin, over 1,000 jin more than that of other production teams. The economic income of commune members was also onefold higher than that of other teams. The local leadership organization summarized their experience of planting paddy rice and called it the "sanjie experience" and tried to popularize it in all other localities, but they were not able to popularize it. In 1980, however, the scientific association and the county scientific committee of Yangchun County signed a "contract for scientific planting" with three production teams to popularize the "Sanjie experience" through the commune's science popularization association; reduced yields were to be fully compensated for and increased yields were to be distributed proportionally. The three production teams happily accepted. After implementation, the paddy rice produced large-scale increases in yield and the costs dropped. At one of the production teams, called "yu ding san," the average per mu yield of early rice increased dramatically from the previous year's 627 jin to 928 jin, and the late rice increased in yield by 51 percent. The costs for chemical fertilizers and farm chemicals dropped, the cost of each dan of rice grains dropped 1 yuan. The per capita average income distributed to commune members increased from 92 yuan the previous year to 154 yuan. Commune members smiled happily.

In recent years, many localities in our nation have implemented the "contract system for scientific farming." Some achievements and experience in agricultural science and technology that could not be popularized for a long time in the past have rapidly been popularized. Science and technology have been directly converted into productivity, and the farmers have applauded the increased yields and increased harvests.

Why is it that the achievements and experience of agricultural techniques that "nobody wanted" are now welcomed? The problem is that in the past it was a habit to popularize them by administrative methods, regardless of whether people could use them or not and without giving concrete technical guidance, and a more important reason was that nobody was responsible for reduced yields. The farmers rely on farming for a living; of course they were not willing to use new techniques about which they were uncertain.

The "contract system for scientific farming" joins the popularization of new techniques with economic benefits and economic responsibility as stipulated by the contracts, so the situation is different. The general methods are: the scientific and technical departments of the county sign contracts with production teams according to the agricultural production needs of the production teams and in accordance with subjective and objective conditions, and issue the contracts through the commune science popularization association (this mass scientific and technical organization is organized by the agricultural technical personnel of the commune, experienced old farmers and various skilled professionals). Agricultural technicians are dispatched and stationed with the production teams, technical measures to increase yields and increase harvests are established in accordance with the actual situation of the production teams, and the technicians teach the production teams to grasp and utilize these measures. If the production team causes a reduction in agricultural yield by the implementation of these measures, the scientific and technical departments pay the compensation. Reduced yields due to natural disasters which could not be resisted are not laid to the account of either side. If there are increased yields, the scientific and technical department and the production team share the surplus proportionally according to the stipulations of the contract. The methods of dividing the increased yields proportionally vary. Some methods provide 30 percent to the scientific and technical departments and agricultural technicians stationed with the production team, and the production team receives 70 percent. Some methods provide that an increased yield of 5 percent belongs entirely to the production team, and that any surplus beyond the 5 percent is equally divided between the two parties. In this way, the farmers will be able to boldly accept new techniques.

Viewing the situation of recent years, most of the scientific farming contracts have been successfully executed. The farmers have increased yields and increased income, the collective economy has been consolidated. When the scientific and technical departments popularized new techniques, some even realized a surplus from the portion that could be retrieved or from total investment, and their enthusiasm in work was even higher. In the farm villages, there is always a group of active persons who enthusiastically study agricultural science and technology. After the contract system of scientific farming was implemented, they joined the commune's science popularization association and they have been able to utilize their talent and develop their skills so their efforts have grown more quickly.

It is hoped that the contract system of scientific farming will be popularized at even more localities!

9296
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SELECTION OF RESPONSIBILITY SYSTEM BY MASSES URGED

Beijing NONGYE JIXIE [FARM MACHINERY] in Chinese No 8, Aug 81 pp 6-7

[Article by Zhu Peiwei [2612 1014 1983] and Li Changjie [2621 2512 2638]: "Let the Masses Decide on, Select and Implement the Responsibility System"]

[Text] At present, as agricultural production responsibility systems are being widely established, the problem of management responsibility for the use of farm machinery has also become an important item in the daily schedule of business. Practice at each locality shows that grasping this central link is the key to farm machinery management work, and it has an important bearing on realizing high efficiency, superior quality, low consumption and safety in the use of farm machinery.

During the past one or two years, under the leadership of the party and government, the farm machinery management department at each level has done a lot of work in this regard. Some have even cooperated with the agricultural management departments, conscientiously summarized the experience in this regard and followed the wishes of the masses, allowing the masses to decide on, select and implement the form of responsibility system suited to the local circumstances, and this has exerted a forceful impetus toward progress.

Major Breakthrough in Management and Administration of Farm Machinery

The emergence of the responsibility system in managing the use of farm machinery is a major breakthrough in the management and administration of farm machinery at present. It has made us recognize that to carry out the work of managing the farm machinery of communes and brigades in farm villages, we cannot stay with the old experience but should implement versatile and multiple management methods in accordance with the many variations in the forms of management of farm machinery that have already emerged before we can adapt to the new situation in the farm villages. The reason that the various forms of responsibility system in managing the use of farm machinery have vitality is that they have adapted to the various forms of business management of farm machinery that have emerged in farm villages and they have alwo organically combined the economic responsibility, economic rights and and economic benefits of the broad number of farm machinery personnel. Therefore, they can fully mobilize the farm machinery stations and the enthusiasm of the collective of the production team and the individual. The broad number of farm machinery personnel have welcomed the responsibility system, saying: "When the form is

"set, the people's hearts are calmed; with a calm heart, interest and enthusiasm emerge." "Joint production of machinery joins the hearts, the spirit of work increases in multiples and there is confidence." Practice proves that implementing the responsibility system has produced visible economic results in managing and using well the presently available agricultural machinery and improving the use of farm machinery. Here, we have used several different types of cases as explanations:

One is the farm machinery team of the Yangzhuang Brigade of Laiyuan Commune in Tangying County, Henan Province. This team has three large and medium-sized vehicles with 12 operators. In the past, before implementation of the responsibility system, nobody maintained the vehicles, and as a result, the operating rates of all three were low, consumption was high. In 1980, after the responsibility system of "five fixed quotas and reward and compensation" was implemented, the operator's post was clarified, everyone was conscientious about his duties, each vehicle was inspected before it was used, returned vehicles were maintained, the percentage of vehicles in good operating condition was kept at above 90 percent, work efficiency was high, and consumption was low. In 1980, the three vehicles completed a total of 43,700 standard mu, the total work showed an increase of 30 percent over that before implementing the responsibility system, and 1,200 yuan were conserved in repair costs and fuel consumption costs.

Another example is the farm machinery station of the Saishan Brigade of Mingshan Commune in Yulin County, Guangxi. Before this station implemented the responsibility system, the operation was not planned, consumption was not fixed, and expenditures for fuel and repair costs constituted about 62 percent of the total income. The deficit was serious. The masses said: When we do not have machinery, we hope for machinery; when we have machinery, we get angry; we ask that the tractor be sent to the farm machinery management station of the commune." Last year, after the responsibility system of single unit accounting and rewards and compensation beyond fixed quotas was implemented, the situation changed greatly and the enthusiasm of the operators was mobilized. The farm machinery personnel took the initiative to maintain the machinery: they inspected and repaired the machinery, did the work of stopping fuel leaks well, and built a fuel storage tank themselves and carried out the purification of oil. Compared with the time before implementation of the responsibility system, the percentage of machinery in good operating condition increased from 70 percent to 90 percent. The amount of work per horsepower increased 21 percent, the consumption of fuel per standard mu dropped by 7 percent, and the cost per standard mu dropped by 31 percent. Deficits and loss were turned around, and there was even a surplus of 2,900 yuan.

A further example is the Guangyu production team of the Shi Xin Brigade of Chejiang Commune in Hegnan County, Hunan. This team has one 190 diesel engine equipped with a 100-20 model water pump and a model 400 rice miller. In the past, before the responsibility system was implemented, every commune member was an operator, everyone competed to operate the machinery, and fuel consumption and cost of parts were large; the masses called it "a money melting pot." In 1979 alone, this machine consumed 2,004 jin of diesel fuel, an average of 14.6 jin per mu. The expenditure on parts was 422.9 yuan, an average of 3.08 yuan per mu. The whole team still suffered a loss of 15 mu of late rice due to drought, a drop of over 7,000 jin in yield. In 1980, the commune held democratic discussions and decided to hand over

this diesel engine and accessory farm tools to operator Fan Heping [2868 0735 1627], who was a certified operator under contract. In only one year's time, the results were good. In 1980, under severe drought conditions, the machine consumed only 1,180 jin of diesel fuel during the whole year, an average of 8.6 jin per mu. Expenditure for parts was only 180.2 yuan, an average of 1.3 yuan per mu. Compared with the situation before contracting to a professional, this amounted to a savings of an average of 8 jin of diesel fuel per mu and a savings of 1.78 yuan. In 1980, the whole team expanded the area of late rice by 10 mu, and an increase of over 30,000 jin in yield was realized for the whole year. At the end of the year, the farm machinery station of the commune evaluated this engine as grade-A equipment, and the salary of the operator was over 30 percent higher than that of the equivalent laborer. The commune members said: The contract method is good: expenditure is conserved, the amount of fuel consumed is less, the collective and the individual have increased their incomes, and pumping water and milling rice can be carried out at any time.

It can be seen from these facts that at the farm machinery station and in the production team, the situation is vastly different if the management responsibility system for using various types of farm machinery is implemented.

Let the Masses Decide

According to the practical experience of each locality, an important rule in establishing a sound management responsibility system for using the various types of farm machinery in farm village communes and brigades is to develop democracy and follow the mass line, to let the masses decide on, select and implement the various forms of responsibility system. Extensive practice proves that the process of selection and implementation of the responsibility system is also a process of developing democracy among the broad number of farm machinery personnel and the masses of commune members and of maintaining farm machinery stations and developing the autonomy of production teams. Because the management responsibility system for the use of farm machinery and the benefits of the broad number of farm machinery personnel and the masses of commune members are closely related, they care about it the most and they have the most right to speak out. Only thus will they be willing to carry out the system and only thus can their enthusiasm be mobilized fully. Therefore, any form of responsibility system that the broad number of farm machinery personnel and masses of commune members are satisfied with should be quickly established, and the system should not be changed at will except under special circumstances.

Under the encouragement of the spirit of the party's Third Plenum, each farm machinery station and production team has liberated thoughts, explored daringly, learned from the experience of the agricultural production responsibility system, and created many varied forms of management responsibility system for using agricultural machinery. At present, the farm machinery management department at each level is conscientiously summarizing the experience in this aspect. According to incomplete statistics, the whole nation already has 11 farm machinery bureaus or farm machinery administration bureaus in provinces, cities and autonomous regions that have established opinions (trial draft) on the management responsibility system for using farm machinery in accordance with the actual situation of the locality.

Of the many types and varied forms of responsibility system proposed by the localities, even though the names and the form are not entirely the same, in summary, they are of two major types. One type is "five fixed quotas, rewards and compensation," "four fixed quotas, one reward," or "fixed quotas, contracts, rewards," accounting salary by fixed quotas with rewards and compensation, and contracts for small jobs. The other type is the specialized contract and accounting wages in joint production. These forms of responsibility system are being practiced at most of the localities at present, and they can be described as follows:

First is single unit accounting, fixed quotas for rewards and compensation. This type includes the "five fixed quotas and one reward" popular in Jiangxu, Sichuan, Yunnan and Guangxi provinces and regions, the "four fixed quotas and one reward" practiced in Jiangxi and the "quotas, contracts and rewards" of Zhejiang. It is characteristic of this form that only the rewards and compensation are related to the results of labor of the farm machinery personnel. The basic wages of the farm machinery personnel are not "joined to production." This form is generally easily practiced at farm machinery stations and production teams with larger amounts of machinery and equipment, with a medium management level and with a leadership ability. At present, this is the most popular type of management responsibility system for use of farm machinery in our nation.

Second is contracting jobs to specialists and accounting wages in joint production (mainly the production value, income or profits). Its characteristics is to contract the farm machinery as a specialized job to farm machinery personnel. The fruits of labor of the farm machinery personnel and their economic benefits are closely linked, i.e., the more they work, the higher the income, the higher the wages, "the boat rises as the water swells," and less conversely. Such forms of contract are of two types: One is to let the farm machinery station contract with the farm village communes and brigades. The other is to let the machinery group or the operator directly contract with the farm village communes and brigades. Regardless of which type of contract, the wages are accounted for in joint production. For example, Nongan County in Jilin Province links the wages of the tractor operator with production. Some of the farm machinery stations and production teams in Hubei and other provinces implement the system of floating work points (wages) or a system of percentage of income and profits. These all belong to this type. Its advantage is that it can sufficiently stimulate the tractor operator to care about the results of his labor and mobilize the enthusiasm of the farm machinery personnel to the greatest extent. But this type requires that the farm machinery stations and the production teams have a relatively high management level and leadership framework, and the guideline of taking agriculture as the key and comprehensive management must be emphasized and implemented. Although this form is not practiced widely at each locality at present, it is the direction of development.

Third is contracting small jobs. This is mainly suited to operations of farm machinery that cannot be fixed by contract for a whole year or jobs that are not steady and that require a low degree of mechanization. Its main characteristic is that during certain busy farming seasons, work is contracted and paid for by the job or on a piecework basis according to the number of jobs completed by the farm machinery operation. This form is most suitable for farm machinery that is required for a short period during the whole year and that is highly seasonal, such

as transplanters, various harvesters, and drainage and irrigation machinery. Its advantage is that in distribution it is not subjected to "equalitarianism," and it is simple and easy to realize.

Fourth is contracting machinery to individuals. Depending on the situation in the locality, this is of two types: One is that the operator contracts for the money to be submitted to higher authorities, but he is not responsible for anything else. This form has mostly led the tractor operators to be willing to run transportation routes but to refuse to till the land, and this even makes it easy for tractor operators to abandon farming and go into business. Many problems have been encountered at the various localities, and this form is not suitable for popularization. The other type of contracting the machinery to individuals is to contract for the money to be submitted to higher authorities as well as farmland operation. Sichuan summarized this type of contracting machinery to individuals as: one, contracting land; two, contracting money; three, contracting condition of the machinery; four, contracting safety. This form is mostly practiced by production teams which have mainly hand tractors. Its advantage is that it is beneficial to implementation of the guideline of taking farming as the key and comprehensive management. It also assures the technical state of the machinery and safe operation without accidents. We believe this form can be popularized. It can be used particularly where the hand tractors of the production team are managed by single units.

Generally speaking, regardless of which form of responsibility system is used, as long as it benefits mobilizing the enthusiasm of the broad number of farm machinery personnel, elevating the technical state of the machinery and equipment, the full development of the function of agricultural machinery, the promotion of the development of agricultural production, and increasing the income of the state, the collective and the individual, we believe that they are all feasible, they should all be supported so that they can quickly be established and we must exert efforts to strengthen and perfect them. It is now obvious that in the question of management of farm machinery in the communes and brigades in farm villages, the responsibility system cannot always be of the same mold, things cannot be done with one blow. Coexistence of many forms should be allowed. As to what form of management responsibility system for use of farm machinery should be used where and in which commune brigades, the wishes of the masses must be respected; the masses should decide on and make the selection on the basis of democratic discussion. In this way, the system can adapt to the present new situation in the farm villages, the enthusiasm of the broad number of farm machinery personnel can be fully mobilized, the presently available agricultural machinery can be managed and used well, and the funct-on of agricultural machinery in production can be fully developed to make its contribution to developing the farm village economy.

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CHANGES IN SUZHOU'S RURAL ECONOMIC STRUCTURE AS NATIONAL RURAL MICROCOSM

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[Article by Chen Lein [7115 6647]: Survey of Changes in Rural Economic Structure of Suzhou Area"]

[Text] Under the guidance of the decision of the Party Central Committee and the State Council to undertake a program of further readjustment of China's national economy, Suzhou Prefecture has also carried out a rational readjustment of its agricultural production structure. As a result of rapid commune and brigade industrial development and the constantly increasing proportion it occupies in the three tier economic income advancement of the rural economic structure is developing in multiple directions. The emergency of this heartening change in the rural economic structure constitutes a vivid expression of the superiority of China's socialist system. It will play an increasingly important role, not only in Suzhou Prefecture, but also in giving impetus to progress toward modernization in the farflung rural villages throughout the land, the strengthening of the collective economy and the alliance between industry and agriculture, hastening development of agricultural production and all kinds of construction endeavors in rural villages, in assuring increases in peasant income and improvement in their livelihood, as well as hastening the course of China's socialist four modernization construction.

1. The Agricultural Production Structure Constitutes the Foundation of the Rural Economic Structure, and Must be Rationally Readjusted First

In Suzhou Prefecture, the terrain is flat and fields fertile. Water resources are ample (including precipitation and the quantity of water drawn from rivers and lakes); the climate is warm; and transportation is commodious (including water transportation), making it suitable for paddy rice growing. Per unit yields are fairly high, making this area one of China's major commodity grain bases. In 1979, the prefecture's total grain output amounted to 8.248 billion jin (paddy rice amounting to 74.8 percent), an all-time annual high, and average yields amounted to 1,449 jin per mu of cultivated land. In fulfillment of grain requisition procurement quotas, particularly in the net amount of grain surrendered to the government, it holds an extremely important position in the province. A comparison of 1979 grain output and requisition procurement quotas is as follows:

Category	Suzhou Prefecture	Jiangsu Province	Suzhou as a Percentage of the Province
Total Grain Output	8.248 billion jin	50.280 billion jin	16.4 %
Requisition Procurement Quota	2.502 billion jin	9.912 billion jin	25.23 %

In 1979 the net amount of grain provided the state by the entire province of Jiangsu was 900 million jin, while the net amount of grain provided the province by Suzhou Prefecture was 1.785 billion jin. This demonstrates that Suzhou Prefecture made a fairly great contribution in grain to the province as a whole and to the people of the entire country. However, in how to make fullest rational use of local soil, fertility, water, and manpower resources, to promote a benevolent biological cycle, and to win optimum economic benefits, some problems still exist. Consequently, this prefecture is gradually in process of carrying out readjustments in the following three aspects of its agricultural production structure.

1. Readjustment of the internal structure of grain crops maintaining a sensible proprotion between single and double season paddy rice, wetland and dryland crops, and crops that nurture and use up the soil, rotational cropping that benefits all types of crops, and promotion of a benevolent cycle in the ecological system and consistently high grain yields. Statistical data show an 835,000 mu decline in the cultivated land area between 1949 and 1979 (the following suggests the actual decline was not that much), while the planted area increased by 2,708,000 mu, the multiple cropping index being 162.8 percent in 1949, increasing to 238.2 percent in 1979. Therefore, increases in rice output depended primarily on expansion of the area doublecropped in rice subsequent to 1970, in an increase in the multiple cropping index, and an increase in total output. The double cropping area for rice in the prefecture as a proportion of total ricefields sharply increased from 23.0 percent in 1969 to 85.9 percent in 1976, with the double cropping index in the four counties of Wujiang, Wuxian, Wuxi, and Jiangyin being more than 90 percent. Experience during the past 10 years and more has shown normal annual yields from two crops of rice in a three crop system have produced a net increase in grain of about 150 jin per mu as compared with output from a two crop system of rice and wheat, to play a definite role in increased total output. However, the consumption of soil fertility is too great; production costs are excessively high; the demands placed on the workforce are inordinately strenuous; and on-time transplanting of seedlings cannot be completely assured, impairment or even losses in the income of the masses occurring as a result. In 1980, for example, when calamity in the form of severe rainy and overcast weather with low temperatures occurred, total paddy rice output fell from the 6.173 billion jin of the previous year to 4.605 billion jin, a drop in output of 25.4 percent, while agricultural production costs as a proportion of agricultural income increased from 43 percent in 1979 to 56.4 percent in 1980, causing great losses for the peasants. As a result, the masses'

reaction to an overly rapid increase in the area double cropped to rice and the proportion of total area devoted to it is: "increased output without increased earnings." and "suffering hardships and losses." Ever since the disaster of 1977, downward reductions began to be made in the area doubled cropped to rice. By 1980, the area had been scaled down from 4.91 million mu in 1976 to 3.93 million mu, and 1981 plans call for a further reduction to 2.50 million mu, or 44 percent of the paddyfield area. What is the proper proportion of ricefields devoted to double cropping? Self-determination of production teams must be honored on this issue, and a sensible proportion worked out on the bases of the climate, soil, fertility, and workforce in each place, as well as by adapting general methods to local situations, so that there will be benefit both to promotion of a benevolent cycle for all crops, and benefit in lowered farm costs with an increase in rice quality (increasing the amount of geng and reducing the amount xian grown) to realize increased output and increased earnings.

In addition, among summer harvested crops, a situation of "wheat squeezing out manure (green manure)" and "expansion of wheat at the expense of rice" also exists. In the process of readjustment, all jurisdications should plan appropriate reductions in the acreage of wheat, barley, and naked barley, and expansion in the area where green manure and rape are grown. Among wheat, barley, and naked barley, appropriate reductions should be made in the proportion of wheat grown as a means of making possible rotational cropping of early rice as a follow-on crop.

2. Readjustment of the proportion of grain crops to economic crops. For the past 30 years, Suzhou Prefecture, like the country as a whole, has prominently emphasized grain production; however, insufficient attention has been given to development of economic crops and to diversifiacation. The area sown increased by 2.71 million mu between 1949 and 1979, most of the increase being in the grain area, while the economic crop area as a proportion of the total area sown declined from the 10.5 percent of 1949 to 9.7 percent in 1979. Despite very great increases in per unit yields, as a result of excessive reduction in acreage, hemp crop total output in 1979 amounted to only 54.7 percent that of 1949. Rape seed per unit yields and total output, as well as per unit yields of mat straw, did not teach all-time highs either. Suzhou Prefecture has a fairly great potential for the development of economic crops such as cotton. This is particularly true of Shazhou, Changshu, and Tailun counties. They should be actuated by determination not to slacken grain production while actively developing a spirit of diversification, making appropriate increases in the area devoted to economic crops such as cotton, and vigorously reviving the area devoted to mulberry groves.

3. Readjustment of the agricultural production structure by promoting all around development of agriculture, forestry, animal husbandry, sideline occupations, and fisheries. A comparison of changes in output value (figured in 1970 constant prices) of agriculture, forestry, animal husbandry, sideline occupations (including brigade operated industries), and fisheries for 1979 with 1949 is as follows.

Units: 10,000 yuan

Category	1949 Absolute Figure	1949 %	1979 Absolute Figure	1979 %	Comparison of 1979 with 1949 Absolute Figure	Comparison of 1979 with 1949 %
Total Output Value of Prefecture's Agricultural Byproducts Including:	42,480	100.00	265,760	100.00	223,280	525.61
Sgriculture	34,651	81.57	131,010	49.30	96.359	278.08
Forestry	179	0.42	665	0.25	486	271.51
Animal Husbandry	4,918	11.58	35,511	13.36	30,593	622.06
Sideline Occupations	1,771	4.17	93,445	35.16	91,674	5,176.40
Including Brigade Operated Industries	---	----	93,034	35.01		
Fisheries	961	2.26	5,129	1.93	4,168	433.71

It may be seen from the above comparisons that: first, the total output value of agricultural byproducts for the entire prefecture increased by 525.61 percent over a 30 year period for an average annual incremental increase of 5.7 percent in a fairly rapid increase. Second, even though the output value of agriculture increased 278.1 percent in 1979 as compared with 1949, for an annual average incremental increase of 3.5 percent, because of the fairly rapid development of brigade operated industries, the output value of agriculture as a proportion of total output value declined from 81.47 percent in 1949 to 49.3 percent in 1979. Third, output value also showed a decline. Though large scale afforestation is difficult because of the limited amoung of land, use of the four besides to plant trees has also suffered impaired development as a result of vacillation over forest right, and planting of forests to protect farmland has even less aroused general serious attention. Water surfaces account for 37 percent of the prefecture's total land area, and 2 million mu of water surfaces are being used to raise fish for yields averaging only 58 jin per mu. The potential in this regard is still very great. Fourth, some changes have taken place in the internal structure of the livestock raising industry. The number of hogs and sheep have risen, while the number of large livestock animals has dropped. The number of live hogs on hand at year end numbered 385,000 in 1949. By 1979, this had increased to 646,000 a 1.3 fold increase. Because of the large population relative to available land, and increases in the level of agricultural mechanization, large livestock animals declined from 102,100 head in 1949 to 26,200 head in 1979.

2. Development of Commune and Brigade Industries Constitutes a Link of Decisive Significance in Giving Impetus to Development of a Multiple Economic Structure in the Farflung Rural Villages

An overwhelming majority of communes and brigades in China's farflung rural villages have begun to operate commune and brigade industries during the past several years. Following the Third Plenary Session of the 11th Party Central Committee, with the thoroughgoing implementation of various policies in rural villages, commune and brigade industries have seen even more rapid development. In Suzhou Prefecture, conditions are quite favorable for development of commune and brigade industries,

and the speed of development has been fairly rapid. The proportion of total incomes in the three tier economy that these industries occupy is also greater than for most prefectures. In 1979, total income from the three tier economy of rural people's communes in Suzhou Prefecture was 40 billion yuan of which income from the two tiers of communes and brigades was 2.41 billion yuan, or 60.3 percent of income from the three tiers. Income from the production team tier was 1.59 billion yuan, not quite 40 percent of income from all three tiers. The proportion of Wuxi County's commune and brigade industries was somewhat greater. In 1980, total output value of the three tier economy of the entire county was 1.034 billion yuan, of which output value from commune and brigade industries was 821 million yuan or 79.4 percent of total output value. Output value of agriculture, forestry, animal husbandry, sideline occupations and fisheries was 213 million yuan, only 20.6 percent of total output value.

In China, cultivated land per capita is fairly little, but mountains are numerous and water surfaces and grasslands are extensive, and natural resources and workforces are abundant. While maintaining steady development of grain production, proper guidance can be given communes and brigades in active development of diversification and industrial production to give positive impetus to rural villages in proceeding from a single product rural economic structure to comprehensive development. This complies with basic economic laws of socialism and requirements of the broad masses of the peasants.

For the past 30 years, agricultural production has developed fairly rapidly in Suzhou Prefecture, and it has continued to be one of China's major commodity grain producing areas. In recent years, commune and brigade industries have seen rapid development in turn; the collective economy has become increasingly stable; and the livelihood of the masses has steadily improved. In a fundamental sense, this has been a great victory secured by China's socialist revolution and construction, and is the result of the steady play of the superiority of the socialist system.

1. The socialist revolution has brought about a change of the "heaven" of the dynastic ruling class and foreign aggressors to an earthly paradise in which the people are the masters.

Since ancient times there has been a saying that "above lies heaven and below lie Suzhou and Hangzhou. But before liberation, the broad masses of peasants who suffered cruel exploitation and oppression in Suzhou and Hangzhou prefectures said there was no "heaven," but a sheer hell. A minority ruling class and foreign aggressors built their heaven on the suffering and death, generation after generation, of the broad masses of laboring peasants. In this "silk capital and land of fish and rice," where natural resources were so abundant, Shanghai and other land cities lay close by, yet the broad masses of workers lead a life like that of oxen and horses, never having enough food in their bellies and wearing rags on their backs, being able only to be cruely exploited and oppressed slaves for the ruling class and foreign exploiters in cities and towns. Under the leadership of the Communist Party, Suzhou, like the rest of the country, went through a long period of struggle to overthrow the three big mountains of imperialism, feudalism and bureaucrat-capitalism, the broad masses of the people becoming masters of the nation, only then beginning to have a well-being of their own. As a result of land reform and the collectivization of agriculture, productive forces were further liberated.

Comrade Mao Zedong noted that "The goal of the socialist revolution is the liberation of productive forces." Just prior to Liberation, rice yields in Suzhou Prefecture were no greater than 400 jin per mu; wheat yields were less than 100 jin per mu; and cotton yields were less than 13 jin per mu. During the 30 years since Liberation, however, as a result of the people's efforts, both per unit yields of grain and of cotton as well as total output have multiplied a few times or several times over. Per unit yields and total output of grain and cotton for 1979 and 1949 ere compared below:

Item	Units	1949	1979	Percent of increase in 1979 over 1949
Total grain output	100 million	23.8	82.5	246.6
Yields per mu	jin	358	1449	304.7
Including paddy rice Yields per mu	"	337	1090	223.4
Wheat yields per mu	"	68	624	817.6
Total cotton output	10,000 jin	923	8572	828.7
Cotton yields per mu	jin	12.8	126.1	885.2

The tremendous increase in both per unit yields and total output of grain and cotton demonstrates that the building of the socialist system greatly advanced development of agricultural productivity, and with the support of the state, increase in the level of the modernization of agriculture and improvement in material conditions played a major role. In 1979, the effectively irrigated area in the prefecture amounted to 91.5 percent of the cultivated land; average use of electric power per mu of cultivated land was 80.2 kilowatt hours; applications of chemical fertilizer amounted to 234 jin per mu; and mechanized power amounted to 0.32 horsepower per mu.

2. The socialist system closely linked the fundamental welfare of all nationalities throughout the country to strive for a common goal, and greatly strengthened the patriotic thoughts and a conception of the overall situation of the people throughout the country.

In 1949, in the early period of the founding of New China, serious flood disasters occurred in the basins of the Yangtze and Huai rivers in 1950, when the country was dealing with nests of bandits and opposition to local despots, and when full-scale reconstruction was being awaited and public finances stretched to the limit, the CCP Central Committee and the Government Administration Council at the time decided to "transport grain to relieve calamity," transfering grain from provinces and regions with a surplus to assure a supply of consumption grain for disaster victims in the middle and lower reaches of the Yangtze and Huai rivers. At the same time, every effort was made to concentrate national financial, material, and manpower

reserves to bring the Huai and Yangtze rivers under control, including control of the Lake Tai basin. This played a positive role in relieving flood and drought disasters in the middle and lower reaches of the Yangtze and the Huai to assure consistently high agricultural output. An old comrade in the area said, "The masses and cadres in our Suzhou Prefecture have not forgotten that 1 billion people throughout the country have to eat, and we have not forgotten the grain shortage during the 3 years of hardship. Much less have we forgotten that in 1950, the CCP Central Committee transferred grain from fraternal provinces and regions to help and provide relief to the people of Jiangsu in a profound gesture of friendship. Suzhou Prefecture, while continuing to operate commune and brigade enterprises and carry out diversification, must use every possible means to increase grain production, to make a contribution to the building of socialism in the country." The reality is precisely this way. In Suzhou Prefecture, the per capita average amount of cultivated land is only 1.1 mu (an average 1.22 mu per capita of the rural population). For the most part, reliance is place on intensive farming and scientific farming to increase per unit yields. Except for the grain used to satisfy personal needs and maintain the livestock industry, and for the development of commune and brigade enterprises and diversification, a large amount of the grain produced is commodity grain provided the state. In the 28 years since 1953, when statistics began to be kept, until 1980, the annual average total output of grain for the prefecture was 5.42 billion jin, of which 2.07 million jin or 38.2 percent of total output was the quantity of grain that was requisition purchased. Of this total, the net grain tendered the state amounted to 1.58 billion jin or 76.3 percent of the requisition purchase quantity. The 28 year average shows an annual contribution to the state by each peasant of 411 jin of requisition procurement grain, 363 jin of which was grain tendered the state. Even during the 1960-1962 period of greatest hardship for the country, when consumption grain per capita averaged less than 400 jin, they acted in terms of the overall situation in a spirit of patriotism and of sharing weal and woe with the people of the entire country to tender an annual average of 1.31 billion jin of grain, making a valuable contribution to the building of national socialism.

3. The rapid development of commune and brigade industry contained the economic conditions of "linking agriculture and industry to bring about the gradual elimination of distinctions between the cities and the countryside." This is an historical task that must be completed during the period of building socialism in China.

Long ago in the "Manifesto of the Communist Party," Marx and Engels predicted the link up of agriculture and industry. This problem possesses extremely important real significance both for China's carrying out of the eight character policy, in which readjustment is the principal part, and for the building of the "four modernizations." First of all, China's rural villages contain 800 million peasants, of whom 300 million constitute a labor force. In addition to developing the range and quality of agriculture, fully and rationally utilizing mountain areas, grasslands, water surfaces, and seacoastal resources in a major effort of diversification, a substantial workforce surplus exists for development of commune and brigade industry and all kinds of services trades. Second, because of the individual differences between agriculture and industry, the "price scissors" between industrial and agricultural products inherited from the old society, and the irrational price structure erected on this foundation, it is very difficult within a short period of time to change the situation in which prices of agricultural products

tend to be low and prices of industrial products tend to be high. However, if the single product agricultural production structure can be gradually developed toward integrated agricultural, industrial, and commercial operations, whereby the rural economy has its own source of profits from the operation of agriculture, industry and commerce, The enduring loss of the value of agricultural products in the prices paid for them will find needed replacement in their distribution, and this can produce benefits for the consolidation of agriculture and better promote four modernization construction. Third, development of commune and brigade industry, and the building of a business organization in which agriculture and industry are linked can accumulate capital for the modernization of agriculture, and help buttress the building of agriculture, which is the foundation of the national economy. Fourth, commune and brigade industry is a helpmate and a complement to the country's big industry, and only by taking the road on which agriculture, industry, commerce, and transportation are linked can fullest use be made of natural resources of individual areas, and scrap be made valuable, the better to satisfy the manifold needs of the livelihood of local people. Fifth, development of commune and brigade industry can advance the building of small collective villages and development of the third estate, particularly promoting the development of cultural education and agricultural science and technology in rural villages to gradually and steadily create conditions for the elimination of the three distinctions.

From the development of commune and brigade industry in Suzhou Prefecture, it is possible to see the role it has played in developing and changing the entire rural economy. In 1979, earnings from commune and brigade enterprises in Suzhou Prefecture amounted to 2.41 billion yuan, a 254.4 percent increase over the 680 million yuan of 1975 for an annual incremental increase of 37.2 percent. Wuxi County's commune and brigade industry developed most rapidly and had the greatest output value. In 1980, output value for commune and brigade industry throughout the county was more than 800 million yuan. Because of the damage caused by overcast and rainy weather and cold temperatures in the county during 1980, the country's grain output was 26.1 percent less than for the previous year, but thanks to the subsidization and assurance provided by profits from commune and brigade industry, average per capita distributions to commune members throughout the county during 1980 saw no reduction, and were even higher than for the bumper harvest year of 1979. The levels of distributed income and income structure for the 2 years are compared below

Units: Yuan

Item	1979		1980	
	Absolute Figure	%	Absolute Figure	%
County Average Per Capita Collectively Distributed Income	139.9	100.0	146.1	100.0
Including: Agricultural Income	47.5	33.9	8.8	6.0
Income from Farming, Livestock, Sideline, & Fisheries	29.6	21.2	45.5	31.2
Income for Labor From Commune & Brigade Industry Profits	62.8	44.9	91.8	62.8

The following may be seen from the above income distribution: Commune and brigade industry profits and labor income plays a major guarantee role in distributions. Without this inherent regulatory support, the grain producing area of Suzhou might possibly have a situation similar to that in Yushu County. Yushu County is a granary of Jilin Province, which tendered 810 million jin of grain to the state in 1979 to take first place in the country in making a major contribution to the country. However, because it dealt in a single product and did not develop commune and brigade industry, by the end of November 1980, this county had accumulated debts to the country totaling 100 million yuan. In a county of 1 million where the average per capita contribution of commodity grain was 800 jin, each person was responsible for 100 yuan. It changed from being a "Dazhai County" to being a "Big debt county." If matters were to continue this way, the nation's major commodity grain area would not only become limited in development and expansion, but would be hard put to maintain stability.

In Suzhou Prefecture some of the masses also say: "It is better to grow cotton than to grow grain; it is better go grow melons (watermelons) than to grow cotton; and it is better to grow sugarcane (using it to make sweets for retail than to grow melons. It is also better to engage in industrial sideline occupation rather than agriculture." Once grain yields have achieved certain per unit yields, in order to continue to raise them, increased means of production must be invested, inevitably greatly increasing production costs. Wuxi County has shown that a three crop system of paddy rice and wheat produced 200 jin per mu more of paddy that a two crop system, but 30 yuan more of the means of production were expended, and 30 more workers were required. If the value of one man day's work is figured at 1 yuan, 200 jin more of paddy will require an increased cost of 60 yuan (naturally, a fairly large expenditure of the means of production and of labor for an average cost of 0.30 yuan per jin increase of paddy. When sold at the 50 percent premium price paid for procurement by the state of excess grain, the price is only 0.18 yuan per jin, a loss of 0.12 yuan. So the masses say the more grain produced, the greater the loss and the less the distributions. In old commodity grain producing areas, inasmuch as requisition purchase base figures are high, negotiated price figures for excess grain represent a fairly small proportion of the total requisition grain figure. In 1979, for example, the proportion for excess grain purchased at negotiated prices for the entire province was 40 percent, while it was only 22.4 percent in Suzhou Prefecture, making people feel that the growing of additional grain would not be worthwhile. Only where come communes and brigades use profits from industry to subsidize grain production, or employ a method of return of wages to assure the earnings of production teams is such grain production maintained.

Of course, the fundamental way to solve low prices paid for grain and agricultural products lies in gradual reform in China's price structure and pricing policies so that prices fundamentally reflect the laws of value, organically linking the state's planning guidance and turning to advantage the mechanism of the marketplace, using normal commodity exchange to gradually shorten the price scissors between industrial and agricultural goods prices, enlivening the market economy, and promoting the fairly rapid development of production. However, during the present time when national fiscal organizations are still in process of readjusting the red ink national economy, fundamental solutions are difficult. Under these circumstances, use of the method whereby commune and brigade enterprises refund profits as a stopgap, supplementary method both helps the collective increase accumulations and

increases earnings of commune members. The state does not have to increase expenditures, but rather increases its revenues (in 1980, Wuxi County alone paid more than 90 million yuan), and between agriculture and industry, cities and countryside, and among all crops of various kinds, the principle of distributions according to work is upheld and the function of balanced regulation and reduction of irrational price differences is served. This is precisely the superiority demonstrated by the rapidly developed commune and brigade industry on the collectivized foundation of socialism.

4. Development in a comprehensive direction of the rural economic structure can better satisfy the regularly increasing material and cultural needs of the entire society. This is precisely an objective requirement of the fundamental economic laws of socialism.

Our party has ever shown concern for agricultural production and the livelihood of the peasants. Though mistakes occurred numerous times in the guidance given, and destruction caused by the interference of Lin Biao and the "gang of four;" nevertheless, we must realize that in the more than 20 years since collectivization, distributions that commune members in Suzhou Prefecture have received from the collective have basically risen in a straight line. In 1979 commune member income averaged 156.90 yuan per capita, a 99.40 yuan increase over the 57.50 yuan of 1957. For 22 years, the average annual increase was 4.50 yuan, 2.50 yuan more than the average annual increase of 2.00 yuan for the country as a whole for the same period. In 1980, serious natural disasters struck, and distributions from the collective to commune members averaged 156.10 yuan per person to maintain the same level as for the bumper harvest year of 1979. In 1979 consumption grain averaged 635 jin per person, a 125 jin increase over the 510 jin of 1957. This is indeed a manifestation of the superiority of the socialist system and an obvious result of the development of commune and brigade enterprises.

In 1980, Wuxi County used profits from commune and brigade industries amounting to 27.74 million yuan for distribution to commune members. Additionally, 14.47 million yuan was used for construction of farmland water conservancy, and as subsidies to agriculture, forestry, and livestock raising. Expenditures for culture and education, hygiene, agricultural science and technology, and the building of small collective towns amounted to 9.94 million yuan. Expenditures for assistance to poor brigades and as wage subsidies for collective personnel in communes and brigades amounted to 7.51 million yuan. This shows that development of commune and brigade industry and the building of a comprehensive economic structure in rural villages has played an extremely important role in strengthening modernization of agriculture and the building of culture and education, hygiene, and small collective towns.

3. Several Problems Awaiting Solution

1. Readjustment of the structure of agricultural production requires strengthening of the administration and management of agriculture, lowering agricultural costs, and increasing the technical and economic benefits of agricultural production. In a high output area such as Suzhou, from a foundation of ever increasing consolidation of the collective economy, promotion of various forms of a system of responsibility for production has brought very good results. However, in some communes

and brigades today, there exists a situation wherein only increased production is asked without calculating costs. Some people suppose that most important is reliance on profit subsidies from commune and brigade enterprises while relaxing management of agricultural production, with the result that the income of the masses has been impaired. In Suzhou Prefecture, beginning in 1975 agricultural production expenses as a proportion of agricultural income have gradually increased year by year from 37.6 percent in 1974 to the high of 56.4 percent in 1980. Though it is true that calamities were the main reason for this year's drop in output, much blindness also existed in application of chemical fertilizer and the use of insecticides. Methods of application were not sufficiently scientific, and waste was very great. As the proportion of double rice cropping is adjusted downward and administration and management improved, production costs may gradually drop. Additionally, while positively allowing no relaxation in production of grain, it is necessary to more rationally readjust the agricultural production structure, adapt general methods to local situations for the development of diversification and restoration of mulberry groves, and make appropriate increases in the area devoted to economic crops in order to lay a good foundation for comprehensive development of the rural economic structure. To this end, the Jiangsu Provincial CCP Committee decided that Suzhou Prefecture's requisition grain procurement quotas for 1981 would be reduced from the 2.5 billion jin of 1979 to 2.2 billion jin, to raise the proportion of requisition grain purchases at premium negotiated prices, and at the same time to provide high quality low cost goods for the support of agriculture in order to make full advantage of the role of this old commodity grain base.

2. An integrated understanding of commune and brigade enterprises to promote better development of commune and brigade enterprises during the course of readjustment. There is a saying making the rounds today to the effect that development of commune and brigade enterprises is "using the small to squeeze out the large," by which is meant that small commune and brigade enterprises squeeze out large state-owned enterprises. This saying is not true. The notion of so-called "small" and "large" is also a fuzzy one. China's industrial and transportation industries are almost all made up of large, medium and small enterprises with large enterprises being only a minority and acting as the mainstay. Medium size enterprises are not too numerous either, so an overwhelming majority are still small scale enterprises. It is understood that in the national industrial system, there are a total of 597,000 large, medium, and small scale enterprises (including central and local government state-owned ones, and enterprises run by government organizations, schools, the armed forces, and large collective and commune and brigade enterprises). Of this total, large and medium enterprises number only 4,072, or only 0.68 percent of the total number, while 99.32 percent are small enterprises. It may be seen that large and medium enterprises cannot do without small enterprises, and in terms of making full use of resources everywhere and satisfying the multiple and different needs of the masses locally, small enterprises play a role that large and medium enterprises cannot play. Large, medium, and small enterprises have their own individual strengths and should be maintained in rational proportions to complement one another and to advance one another.

The saying that commune and brigade enterprises use up agricultural materials that could be used in large state plants also merits further study. Reportedly, in 1980, (the production year running from 1 July 1980 to 30 June 1981), state procurement plans for major agricultural products including grain, cotton, edible oils,

jute and amberi hemp, sugar, and tea were overfulfilled before the deadline had expired. The agricultural raw materials used by most commune and brigade enterprises derive either from those portions retained or portions in excess of following fulfillment of quotas, or are goods brought in from elsewhere for processing. With regard to the blind building and duplicative building of plants by commune and brigade enterprises, readjustments are currently underway to solve the problem.

Commune and brigade enterprises developed from a foundation of capital accumulations and commune member labor from production teams have an intimate blood relationship with the broad masses of the peasants. The workforce in these enterprises are at once workers and peasants, and peasants who come and go, returning to their production teams during the extremely busy farming seasons, while working in enterprises in other times. Except for that portion of wages stipulated as being required to be retained for necessary expenses, most is in the form of "wages returned to production teams" for distribution there, which they participate in as members of the production team. This both increases the income of commune members and reduces differences between industry and farming. Some communes and brigades are also thinking about planned assignment of a working member of each household to work in commune and brigade enterprises. Commune and brigade enterprises generally make do with whatever is available, finding raw materials locally. They are characterized by spending little money, rapid construction, big profits, and training large numbers of people, which large industries cannot match. They play a role in consolidating and strengthening the collective economy, advancing agricultural production, and increasing the income of the masses. They have great vitality. The "Various Regulations of the State Council on Commune and Brigade Implementation of National Economic Readjustment Policies" noted that "Commune and brigade enterprises have become a major integral part of the rural economy, and are in keeping with the trend toward comprehensive rural economic development." We must have a common understanding and make the most of the active role of commune and brigade enterprises, and in dealing with problems that exist in moving forward, we must make readjustments the better to advance their development, making the most of their active role.

In 1980, Suzhou Prefecture's commune and brigade enterprises returned between 15 and 20 percent of the year's profits to production teams for direct distribution to commune members. There was a general reaction that the proportion of profits returned for distribution was too low, and that the course of production of commune and brigade enterprises and the proportion of profits used for distribution had been decided by superior party and government leaders, while commune members and production teams had no authority to participate in the decisions. Clear requirements about this matter are given in the State Council's "Regulations." This touches on the important question of to whom the highest authority in commune enterprises belongs. According to the spirit of the "Regulations," this should be linked to realities in each jurisdiction, and be diligently carried out.

3. With the development of commune and brigade industry and diversification, and with the building of a comprehensive system integrating agriculture, industry, and commerce, the socialization and specialization of China's agriculture has been greatly advanced, and it is gradually following the road of various forms of joint development. Comrade Mao Zedong said, "Without the socialization of agriculture, there can be no complete consolidation of socialism." But today's channels for the flow of commodities are not entirely clear, and quite a few problems exist in the

supply of raw materials and the sales of goods. It is hoped that departments concerned will actively help solve problems that appear in rural economic progress, and promote the healthy development of the rural economy. Agriculture is the foundation of the national economy. All trades and industries should support agriculture. Doing a good job in agriculture is a fundamental assurance for hastening developing of the entire national economy.

9432
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INSTITUTE OF PLANT PROTECTION DESCRIBED

Shanghai KEXUE ZHONGTIAN [SCIENTIFIC FARMING] in Chinese No 8, Aug 81 pp 16-17

[Article by Scientific Research Department, Plant Protection Institute, Chinese Academy of Agricultural Sciences: "Plant Protection Institute, Chinese Academy of Agricultural Sciences"]

[Text] The Plant Protection Institute of the Chinese Academy of Agricultural Sciences is located at the northern end of Yuanmingyuan in the eastern foothills of Yanshan in Beijing. It was founded in 1957 through the expansion of the Plant Protection Department and the Agricultural Chemistry Department of the former North China Institute of Agriculture. It moved to Xinxiang in Henan, last year moving back to its original site to be reconstituted. Staff and workers currently number somewhat more than 180.

There are eight research offices in the institute as follows: Disease and Insect Pest Basic Survey and Research Office, Plant Disease and Nematode Research Office, Wheat Rust Research Office, Bacteria and Virus Research Office, Destructive Farm Insect Research Office, Destructive Migratory Flying Insects Research Office, Pesticide Research Office and Intelligence Data Research Office. The research offices are subdivided into various sections, each of which is responsible for various problems.

Since the founding of the institute, it has undertaken national plant protection, plant immunization, pesticide research tasks and other major projects, and it has organized, on a national scale, cooperation in scientific research and scientific and technical exchange activities with foreign countries. It has also done a large amount of work for the promotion of agricultural production and the development of plant protection science and technology, and has registered research achievements in 10 projects.

As early as the late 1950's, China stipulated in its "Program for Agricultural Development" the substantial eradication of 11 major disease and insect pests. The institute has participated in research on six of these and has made achievements in the laws governing their occurrence and methods for their prevention and control. Examples include research in comprehensive prevention and control of locusts, research on "666 soil treatment" for the prevention and control of wheat sucking insects, research on comprehensive measures for the prevention and

control of black rot in sweet potatoes, research on wheat rust, and research on the laws governing wintering over of armyworms and migration of flying insects.

During the 1960's and 1970's the institute made major achievements in comprehensive prevention and control of cornborers, in chemical prevention and control of cotton worms, prevention and control of underground insect pests, and research in the comprehensive prevention and control of cotton wilt. Research in the area of cotton wilt, in particular, resulted in the breeding of disease resistant, high yield, fine quality new variety No 86-1, which was greatly welcomed by cotton farmers.

The institute also conducted experiments in artificial propagation of cornborers, Chinese grass flys [0022 5478 5430 5749], cotton boll worms, and army worms.

In the area of breeding of disease resistant varieties, corn virus-resistant superior varieties Fengdan No 1, and Fengdan No 3 played a definite role in production. In the area of quarantine, fine accomplishments were made in vacuum fumigation rapid processing of quarantined insect pests, and in identification of bunt of wheat in imported wheat.

In the field of pesticide research, most important was developments in research on pesticides of high effectiveness, low toxicity, and low residualism, and research was carried out on their processing, storage and use.

As long ago as the early 1950's, 666 was successfully synthesized, and in the beginning of the 1960's, research was undertaken in organic phosphate pesticides such as "1605," and "Baomianfeng," which were successfully developed. Research was also conducted on chlordane, DDT powder, jialiufen [3946 0362 4720], and dikushuang [2420 2661 7175]. In recent years, remarkable achievements have also been made with capacity spraying by ultra-low flying aircraft. Use of substitutes for 666 and other organic phosphate pesticides have not only shown remarkable results in the prevention and control of grasslands locusts, but they have been safe, economical, and have been well evaluated by those concerned.

In addition, this institute has also set up a plant protection information research office, and has enlarged its library and reference materials room, adding some modern instruments and equipment. Now it has more than 20,000 scientific and technical books from China and abroad, and more than 500 different Chinese and foreign scientific and technical magazines.

This year the institute established a publishing office to take over publication of ZHIWU BAOHU [PLANT PROTECTION] magazine (bi-monthly), a Chinese Plant Protection Society publication distributed both inside China and abroad. It also publishes specialized publications such as ZHONGGUO NONGZUOWU BINGCHONGHAI [CHINESE FARM CROP DISEASES AND INSECT PESTS], NONGZUOWU BINGCHONGHAI TUPU [ATLAS OF FARM CROP DISEASES AND INSECT PESTS], and NONGYE KUNCHONG YICONG [COLLECTION OF TRANSLATIONS ON AGRICULTURAL PESTS].

9432
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SOCIALIST PURITY OF INDIVIDUAL HOUSEHOLD PRODUCTION CONTRACTS DEFENDED

Beijing NONGCUN GONGZUO TONGXU [RURAL WORK NEWSLETTER] in Chinese No 8, Aug 81 pp 24-26

[Article by Lu Xueyi [7120 1331 5669]: "Why Does One Say That Fixing Output Quotas For Individual Households Remains True to Socialism"]

[Text] Editor's Note: Following implementation in China's rural villages of the spirit of the Third Plenary Session of the 11th Party Central Committee and the 1980 Central Committee document 75, broadly establishing various forms of a system of responsibility for production, the initiative of the peasantry was effectively aroused so that agricultural production revived and developed fairly rapidly. But like anything new and untried, the various systems of responsibility are also in the process of development and gradual improvement. The experience of China's 800 million peasants is rich and varied, vivid and vigorous, and along with the perfection and development of the system of responsibility, numerous new experiences require our timely summarization, and numerous new problems also arise requiring our further exploration and solution. In this connection, this magazine has started a new special column titled, "Exploration of Problems." It is hoped that the broad masses of comrades engaged in rural work, and comrades concerned with work involving rural economic theory will be able to combine theory and practice in diligent investigation, thought, exploration, and summarization of problems, giving the results to this magazine so that they may be exchanged with others. We believe that inasmuch as conditions differ in the operation of various forms of a system of responsibility, that one hundred flowers should blossom, and that in understanding and exploration of theory, one hundred schools of thought should contend. In this article, Comrade Lu Xueyi expresses his own views on contracting production on an individual household basis, which are provided to all for their reference.

The ability of contracting production on an individual household basis to increase output, increase earnings, and increase contributions is now an acknowledged fact. However, as to whether contracting production on an individual household basis is in keeping with socialism, some comrades are doubtful and apprehensive. This article intends to explore this problem somewhat.

(1) Lenin said that socialism has two essential characteristics: one is public ownership of the means of production, and the other is distribution according to work. So long as these two tenets are adhered to, one remains true to the socialist orientation and path, maintaining an essential distinction from capitalism and all exploitive systems. China's rural cooperativization of 1956 fundamentally brought to a close the change from private ownership of the means of production, and fundamentally instituted public ownership of the means of production and distribution according to work, signalling the founding of a rural socialist economic system. This was a major economic transformation. However, the founding of a public ownership system is not the same as saying that the new production relationships were perfect in every way or that the development of productivity would automatically be spurred. Reality is not that simple. Marx said, "The supplanting of economic conditions of enslavement with the labor conditions of free association requires some time to gradually take shape (This is economic reform); In this, not only is a change in the method of distribution required, but a new organization of production is also required." ("Selected works of Marx and Engels," Vol II p 416). After the establishment of a new economy of public ownership, it is necessary to resolve the forms of actual coordination between workers and the means of production in the direct production process, to organize well the individual links of economic activity of production, exchange, distribution, and consumption, and to build an appropriate economic management system as a means of perfecting the new production relationships and promoting the development of productivity.

Following the socialist transformation of private ownership of the means of production in the farflung rural villages of China, a whole series of problems involving how to administer and manage the collective economy, how to organize production, and how to do a good job of distribution were, for various historical reasons, not conscientiously resolved. For a long period of time administration and management was not given serious attention, resulting in the existence of blind direction being given in production, a lot of thrashing around taking place in labor, and egalitarianism being practiced in distribution, which throttled the enthusiasm for production of the peasants, and the superiority of the collective economy was not exploited the way it should have been. Following the overthrow of the "gang of four," and particularly after the Third Plenary Session of the 11th Party Central Committee, rural cadres and masses faced reality, emancipated their mentality, and adapted general methods to local situations to establish various forms of a system of responsibility for production, with more than 30 percent of production teams instituting the contracting of production on an individual household basis, or the contracting of work on an individual household basis. The experiences of more than 2 years attest the ease of operation and the directness of benefits of the method of contracting production on an individual household basis, which has linked the peasants' labor and remuneration, responsibility and authority to solve difficult problems in the collective economy that remained unsolved for many years, and aroused the initiative in production of the peasants to cause a rapid upturn in agriculture. Numerous former "three dependencies" teams have turned into three increased teams (increased production, increased earnings, and increased contribution), enabling the state to cut back on a large amount of expenditures for resales of commodities to the place of production and for relief, to put down a number of burdens. Following institution of contracting for production on an individual household basis, quite a number of communes and brigades that had been unable for many years to fulfill their requisition procurement quotas have fulfilled or over-fulfilled their quotas. A number of

production teams that had been scraping the bottom of the barrel have established public accumulations thanks to withholdings, and some have even newly bought tractors. Distribution of earnings to commune members has increased several times over, solving problems in providing food and shelter to the peasants that had remained unsolved for many years, and in some cases some commune members have annual incomes of as much as 1,000 yuan, and there are standout households with up to 10,000 jin of grain. In this connection, the peasants in Fuling Prefecture in Sichuan Province say, "Contracting for production on an individual household basis has increased grain production, increased money earnings, made the commune members prosper, improved the collective, and benefitted the country. This system of responsibility is really working!"

In achieving such effectiveness, the contracting for production with individual households has both adhered to the system of public ownership of the means of production and to distribution according to work, and has not left the socialist road.

First, the means of production of land, large farm machines and implements, and water conservancy facilities remain under collective ownership. Commune member households with whom contracts have been made for production only have the right to use these means of production, not the right of ownership; and it is further clearly stipulated that commune members may not transfer possession, lease or sell such means of production; whenever necessary the collective may make any readjustments necessary. Some comrades say that some production teams do not have much collective wealth, so when contracting for production with individual households is practiced, the collective becomes a dead letter and closes up shop. Such a view is wrong. Once these production teams contract for production with individual households, at the very least the land remains under the ownership of the collective. According to the politico-economic viewpoint of Marxism, land is most important in agricultural production, and the most fundamental means of production. Adherence to the collective ownership of land means adherence to the public ownership of the most fundamental means of production and maintenance of the collective substance of production teams. In terms of the agricultural means of production in China at the present stage, land holds a position of decisive significance as an agricultural means of production.

Second, in instituting contracts for production with individual households, the portion of agricultural products produced by commune members whose production has been contracted for is turned over to production teams for distribution, and after the production teams have tendered to high authority requisition procurement and have made various deductions, distributions are made in accordance with work points recorded for commune members who have turned over their production, That portion in excess of production contracted for reverts to commune members. This constitutes remuneration for labor in excess of quota, and is precisely a further embodiment of the principle of distribution according to work. Some people say that contracting for production with individual households is having the peasants eat whatever they make, and that it can only be said to be consuming the products of one's own labor and cannot be said to be distribution according to work. Such a statement is wrong. Institution of production contracts with individual households is distribution according to work as has been previously stated. Even when contracting production with individual households is done, the way of distributing the products that commune members produce in accordance with "guaranteeing some for the state, deducting sufficient for the collective, and what remains being one's own" appears to be a case of production teams not exercising unified distribution. However, this method resolves,

first of all, the relationship among the state, the collective, and individuals, while at the same time looking after the interests of all three. Within the same collective and under identical circumstances, the obligation to the state and to the collective that each household must bear is fixed. When each household invests a lot of labor and administers and manages well thereby gaining high output, after turning over amounts required to the state and to the collective, if what remains for themselves is a lot, this means the more one works the more one gains, which is still consistent with the principle of distribution according to work. Of course, looked at in terms of methodology, this is different from the former practice of production teams of making distributions according to work on the basis of workpoints. Nevertheless, the principle it expresses is still the same. This may be said to be a special form of distribution according to work under specially designated circumstances.

Therefore, contracting for production with individual households is a form of a system of responsibility for production founded on public ownership of the means of production, which is different from the individual farming done on the foundation of private ownership, which was practiced before cooperativization.

(2) Some comrades say that contracting production with individual household is good all right, but after entering into contracts, the rich stay rich and the poor stay poor, leading to a polarization. In the process of developing production following contracting for production with individual households, because of differing conditions in different categories of households, some peasants were able to prosper first, while some peasants prospered more slowly, and others remained in difficult straits, leading to differences in the degree of wealthiness. This is a fact, but it is not polarization. So-called polarization means both the increasing concentration in the hands of a small number of people of large amounts of land, capital, and wealth as the result of exploitation practiced under private ownership of the means of production, and it also means the increasing hardship, bankruptcy and increasing poverty of the broad masses of workers, peasants, and working people. However, following contracting for production with individual households, ownership of land and other means of production is public, and a situation in which "the fields of the wealthy have crisscrossing paths, but in the fields of the poor there is not enough space even to stand an awl on end" can never occur again. The difference in degree of wealth that has come about is a difference only of who becomes wealthy first and who becomes wealthy later in a process whereby everybody becomes wealthy. This marks an essential difference from the polarization caused by exploitative relationships, and should not be mentioned in the same breath. Moreover, production teams, by withholding more public accumulation funds and public welfare funds, etc (and the state through the method of the income tax) can regulate and increase assistance for the livelihood of hardship households so that their basic livelihoods are assured, and the gap narrowed so that everyone becomes wealthy gradually. This is much better than the former situation whereby everybody was "bound together" in poverty.

Some comrades say that in the quest for output under the contracting of production with individual households the modernization-of-agriculture-orientation has been lost. The experiences of the past 2 years show this statement to be untrue. Contracting for production with individual households not only can increase output, but also promotes farm mechanization and advances scientific farming. Contracting for production with individual households may well become a new starting point for effecting agricultural specialization and socialization, meaning the modernization of agriculture.

Some people suppose that the peasants are small producers, fairly narrow in their outlook, and conservative, so once contracting for production with individual households is done, scientific farming will not be done. The facts are entirely different. Following contracting for production with individual households, the fruits of labor and the peasants' welfare become closely intertwined, and promotion of science and technology and the welfare of the peasants also become closely intertwined. When the peasants contract land, they want to farm it well, so they take the initiative in active study of the applications of science and technology. Right now farm technicians have become the persons most welcomes by the peasants, and weather reports, insect pest forecasts, and scientific farming forums have become the programs from broadcasting stations that the peasants most like to listen to. Promotion of superior crop varieties, sensibly close planting, proper fertilization, and such scientific farming measures are now done better than formerly. In Anhui Province, a Peasants Scientific Farming Society has appeared, and new things such as peasant sparetime scientific and technical schools have gradually become mass networks for the spread of technology among the peasants. In the wake of the consolidation and perfection of the system of responsibility for production of contracting for production with individual households, the peasants have figured out every possible means of knowing everything possible about production including the study of science. Mass fervor for the use of science is on the upsurge.

Heretofore in the mechanization of agriculture, some prefectures did not adapt general methods of local situations, or give attention to economic effectiveness. Also, because administration and management was not done well, the burdens of the peasantry were increased, and consequently the peasants did not fully welcome agricultural mechanization. Since the advent of contracting, it is a fact that some took their tractors apart, and some sold them. But after contracting for production with individual households had been in effect for 1 or 2 years, particularly in communes and brigades where production conditions favor mechanized farming, agricultural production developed and the peasants became well to do, and then there was an urgent demand for farm mechanization. Not only was machinery that had been taken apart put back together again, but funds were also pooled by production teams collectively or by several households in combination, or by individual commune members, to buy tractors and other farm machines. In addition, several commune households pooled funds for joint operation of tractor stations. In Chuxian Prefecture in Anhui Province, in 1980, 70 percent of production teams practiced contracting production with individual households. That year commune members pooled funds to buy 126 large and medium size tractors, and 1,933 hand tractors, 1,926 pieces of processing machinery, 18 farm vehicles, and 25,298 draft animals. This was more than in any previous year. In 1980, Taiping Commune in Jiashan County in this same prefecture bought 2 medium size tractors and 116 hand tractors, exceeding the total number purchased during the previous 20 years. This was something entirely unexpected when people started contracting production on an individual household basis. Worthy of note is that as a result of commune members having bought tractors or having gone into the operation of civilian-operated tractor stations, thereby breaking up independent operation of tractor stations by the state or the collective, competition has taken place, forcing improvements in administration and management, improvement in service attitudes, and increasing quality of plowing, thereby advancing farm mechanization endeavors overall.

Following contracting for production with individual households, agricultural production developed and the farmers gradually became prosperous. They had money and they had time, so diversification began to burgeon. Rural village social division of

labor began to develop. In places that had early put into practice the contracting for production with individual households, large numbers of multiple occupation households began to appear. While contracting to farm collectively cultivated land, these farm households worked at concurrent jobs such as raising hogs, chicken, and fish, beekeeping, kilns, or processing jobs. Some also went into business, did repair jobs, or worked in service trades. Then, when income from these concurrent jobs gradually exceeded that from farming, provided the state had established relevant policies such as those that would permit them to obtain grain and non-staples at a parity price, they could return the land to the collective and devote themselves to specializing in their concurrent jobs, their concurrent jobs turning into specialties to form specialized occupational households of various kinds. Meanwhile, the amount of land tilled and the scope of activities of those farm households that continued to farm could expand, and they could become households with a specialized occupation too. As a result of the development of specialized division of labor, the number of commune members engaged in farming decreased, bringing about an increase in productivity of the agricultural workforce, and then social wealth could greatly increase. Following development of specialized division of labor, exchange could develop among various specialized households and among specialized households and specialized farming households. This would inevitably require cooperation, which would inevitably require institution of new combinations, which would give rise to new economic organization. This, moreover would be a collective economic organization of a high order founded on specialized production, which could then advance specialization in rural villages, and development of socialization to promote development of agricultural modernization. This was, of course, an unprecedent prospect for the rural villages. In the rural villages of Anhui and Gansu provinces, where contracting for production with individual households got off to a comparatively early start, large numbers of farm households doing concurrent jobs, specialized households, civilian operated enterprises, and such new economic phenomena have appeared, from which can be seen development of such a future tendency following the contracting for production with individual households. In these terms, contracting for production with individual households becomes not only a temporary measure for solving the problem of food and shelter for the peasants, but may very well become a bridge for the specialization and socialization of agriculture, leading to a road suited to China's circumstances for the modernization of agriculture.

Of course, contracting for production with individual households has not been practiced for very long. It requires much strengthening of leadership and a lot of work to solve new contradictions and new problems to bring it to perfection. Nevertheless, contracting for production with individual households can increase labor productivity, increase production, and improve the livelihood of the peasants, with benefits for the state and the collective. It can also advance specialized division of labor and develop new links. These facts show that contracting for production with individual households is a form of the system of responsibility for production founded on public ownership of the means of production. It is a transformation in the form of administration and management within the collective economy, and this transformation is in line with socialist orientation.

9432
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CRITERIA FOR EVALUATING FARM PRODUCTION EFFECTIVENESS EVALUATED

Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese No 8, Aug 81 pp 58-59, 63

[Article by Zhou Cheng [0719 6134]] and Liu Tianfu [0491 1131 4395]: "Brief Discussion of Criteria Used in Evaluating Economic Results of Farm Crop Production"]

[Text] Economic effectiveness of farm crop production is the most important integral part of the economic effectiveness of agricultural production. Along with advances in agricultural modernization, along with the steady increase in the level of intensification of agriculture, and along with increased output without increased earnings or even increased output with reductions in earnings, which is increasingly common, people have deepened their understanding of the importance of examining and increasing the economic effectiveness of farm crop production.

In order to be able to examine and increase economic effectiveness of farm crop production, it is necessary to select appropriate criteria for evaluating the economic effectiveness of farm crop production. For many years, numerous criteria have been used in practice, each of them explaining the economic effectiveness of farm crop production from different angles. Frequently used criteria have been: output per unit of area, output value per unit of area, living labor production rate, product costs per unit, costs per unit, output, production costs per unit of product, and net earnings per unit of area. Several of the major of these criteria have been selected, and our view of them discussed below.

First of all, let us talk about the criterion of output per unit of area. Strictly speaking, this criterion cannot be considered a criterion of economic effectiveness. That is because it is unable to reflect embodied labor invested in agricultural production and the consumption of living labor, or the ratio relationship among useful results derived; generally speaking, the ratio of "output to investment" forms a criterion for reflecting economic effectiveness.

Of course, if we regard the soil itself as an "invested" production resource in production, and regard quantity of production as a useful result "produced," the output per unit of area criterion can become an effective criterion. However, inasmuch as the area of cultivated land can only reflect the quantity of production resources invested in material form, and cannot reflect the amount of embodied labor expended, the effectiveness of production that the output per unit of area criterion reflects is, unambiguously speaking, the effectiveness of production skill. It demonstrates

the amount of products that people have produced per unit of area under certain natural and technical conditions. But as to the question of whether production of such a quantity of products was or was not profitable, the criterion of output per unit of area cannot by itself provide an answer. Obviously this is an extremely important point. Even though it is a very general principle; nevertheless, people frequently seem to have a hard time understanding it. For a long time and to a fairly large degree, people have formed a blind notion as follows: high output per unit of area is the same thing as high economic effectiveness. Only after the phenomenon of increased output without increased earnings, or even increased output with reduced earnings, became increasingly prevalent did people begin to give attention to the correction of this notion.

All of the above is only one aspect of the problem, however. Another aspect of which we should be aware is that output per unit of area is truly an extremely important criterion. That is because land is a basic means of production in agriculture, whose area is limited. In order to satisfy the increasing needs of people for products, vigorous efforts must be made to increase output per unit of area. Moreover, numerous techniques and economic criteria involved in the production of farm crops are part and parcel of the concept of "units of area" (things such as cost per unit of area, profits per unit of area, and work input per unit of area etc). All must be examined in terms of unit of area. Insofar as possible, the criteria of economic effectiveness of agricultural production should be linked to the criterion of output per unit of area. Only in this way can the special contradictions in agricultural production be better reflected. In other words, the higher the output per unit of area, and the lower the quantity of labor expended per unit of product, the higher the economic effectiveness of farm crop production. In short, such instances are determined by the special function of land in agricultural production and the limitations of its area.

As far as the criterion of output value per unit of area is concerned, essentially this is an expression in money terms of output per unit of area. Though output value per unit of area cannot directly reflect the technical effectiveness of agricultural production in the way that output per unit of area can, its main characteristic lies in convenience in making comparisons of products of different value. Thus, the criterion on output value per unit of area itself possesses a distinctive value for which no substitute can be found. Nevertheless, at the present time it cannot extricate itself from the bad effects created by price and value deviations that form factors that cannot be compared.

Next, let us talk about the criterion of the living labor production rate. The living labor production rate represents the efficiency of social labor in the production process. It indicates the proportional relationship between the products of labor and the expenditure of labor. Consequently, the higher the production rate of labor, the greater the economic benefits. Currently, however, because it is still difficult to use time to measure consumption of embodied labor and to add it to the expenditure of living labor, one can consequently only calculate the production rate of living labor, while the production rate of living labor and the production rate of total labor (i.e., the production rate that is an aggregate of the expenditure of embodied labor and the expenditure of living labor) are frequently, to a fairly large extent, mutually deviating. This deviation is frequently revealed in two ways. One is an increase in the production rate of living labor while total production rate of labor

may decline. The other is when the degree of the total production rate of labor may be greatly lower than the rate of increase in the production rate of living labor. Generally speaking, the use of modern machinery and equipment for a great saving in expenditure of living labor greatly increases expenditure of embodied labor, but when crop output does not increase or else does not commensurately increase proportionately, such a situation may come about. Therefore, the criterion of the production rate of living labor cannot fill the role of the total production rate of labor criterion. It can only reflect the efficiency produced by the expenditure of living labor. In the examination of economic effectiveness of farm crop production, it can only explain one aspect.

To point out the limitations of the criterion of the production rate of living labor does not mean that increase in the production rate of living labor is without significance, or that increase in the levels of workers' material skills and equipment is not necessary. We must act in accordance with the interrelated principles of "requirements, possibilities, and effectiveness," and adapt to locales and to different sectors the use everywhere of increased mechanization to increase the production rate of living labor. We positively cannot divorce ourselves from the three situations and conditions of "requirements, possibilities, and effectiveness" in a lopsided manner seeking after increases in the production rate of living labor.

Let us talk next about the criterion of cost per unit of product. Cost per unit of product is the quotient derived when cost per unit of area is divided by output per unit of area. The higher the output per unit of area and the lower the cost per unit of area, the lower the cost of product per unit of area and the higher the economic effectiveness. The expenditure of embodied labor and of living labor that cost represents possesses a certain degree of validity. Thus, to a certain degree, the cost situation reflects the total production rate of labor situation. We might as well use cost as a "substitute" for total production rate of labor. In this sense, the criterion of cost is a fairly big comprehensive indicator.

However, inasmuch as the limited amount of land determines the importance of increasing output per unit of area in agricultural production, not to inquire whether per unit yields are high or low, but only to consider lowering costs of products per unit of area is also not realistic. For example, let us suppose that we greatly reduce costs per unit of area, thereby leading to a great decline in output per unit of area as well. In terms of making full use of the productive potential of the land and producing a greater amount of product to satisfy social needs, this would not be a sensible thing to do. Therefore, the criterion of cost per unit of product has definite limitations as well.

The criterion of output per unit of cost is the reciprocal of cost per unit of output. Even though the forms of expression differ, and numerical values differ, the trend of economic effectiveness that both reflect are identical. In other words, lowering of cost per unit of product means increase in output per unit of cost.

Finally, let us talk about the criterion of net earnings per unit of area. First look at the following formula.

Net earnings per unit of area (yuan) = output per unit of area x price per unit of product - cost per unit of area.

The above formula shows that the criterion of net earnings per unit of area is restricted by the two criteria of output per unit of area and cost per unit of area, assuming no change in price. It forms a direct ratio with the former and an inverse ratio with the latter. Therefore, this criterion can fairly comprehensively reflect results of changes in output per unit of area and cost per unit of area. High output per unit of area and low cost per unit of area must be expressed as low cost per unit of product and high output per unit of cost. Thus, this criterion actually encompasses the factor of cost per unit of output. When actually applied, it uses the relative ratio of various net earnings per unit of area criteria, and thus it is possible to know from one aspect whether economic effectiveness is high or low.

Of course, this criterion also has its own shortcomings, the most important of which is the need to take into account the effects of changes in farm product procurement prices. Changes in net earnings per unit of area occassioned by changes in prices are entirely unrelated to increases in output and decline in the expenditure of labor. In particular, the comparative prices of different farm products frequently contain irrational spots; at different times and in different places, the procurement price for the same farm products is frequently fairly different. Thus, looked at in social terms, one positively cannot determine whether economic effectiveness in production of farm crops is high or low simply on the basis of whether net income per unit of area is high or low. Furthermore, if this criterion is not properly handled, it is possible to cause or to abet a mentality of "profits above all," thereby violating the basic economic laws of socialism.

In the foregoing, we have analyzed the major current indicators for assessing economic effectiveness in producing farm crops. It may be seen that each of these criteria has its own individual role to play, and each has its shortcomings. Of all the criteria, per unit cost of farm products (or its reciprocal, "output per unit of cost"), and net earnings per unit of investment are fairly large comprehensive criteria. Therefore, among the criteria currently in common use, these two indicators may be said to be the major indicators for examining economic effectiveness of farm crop production. By combining these two criteria and using them at the same time, it is possible to fairly comprehensively reflect the economic effectiveness of farm crop production.

9432
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UNIFIED ADMINISTRATION, REMUNERATION LINKED TO OUTPUT EXPLAINED FURTHER

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 8, Aug 81 pp 11-12

[Article Summarizing Reader's Contributions: "Strive to Perfect Uniformly Administered System of Responsibility Linking Output to Work"]

[Text] Editor's Note: For the purpose of exchanging situations, exploring problems, and perfecting the system of responsibility for production, this newsletter has done a preliminary overall study of the content of incoming correspondence on the various forms of a system of responsibility, which will be published continuously beginning with this issue. Now, a briefing is given here on "Strive to Perfect Unified Administration of the System of Responsibility Linking Output to Work," for the reference of everyone.

Among the various existing forms of a system of responsibility for production currently prevailing in rural people's communes, one kind is called "unified administration linking output to labor." The applicability of this system of responsibility is fairly broad. Generally speaking, it is suited to brigades in which the levels of production and the levels of management are moderate. It can also be instituted in brigades in which the level of production is low, or in brigades in which the level of cadre management is high. Even in brigades in which the levels of production and management are fairly high, results of its implementation are equally remarkable. Precisely because this is the case, this kind of system of responsibility, 53.32 percent of them in Henan, 46.9 percent of them in Hebei, 30.3 percent of them in Shandong, 25.4 percent of them in Shandong, and 21.4 percent of them in Hubei.

Basic Requirements and Methods

Comparison of the "uniformly administered system of responsibility linking output to work" with other forms of a system of responsibility shows numerous points of similarity and some differences. In terms of its methods, it is basically the same everywhere, but specific particulars are not the same. In an overall sense, its basic requirements and methods may be categorized as "three invariables," four uniformities," and "five fixeds with one reward."

By "three invariables" is meant no variation in the collective system of ownership; no variation in the principle of distributions according to work, and no variation in the basic accounting unit. With this as a foundation, individual workforces in production teams practice the "four uniformities," and the "five fixeds and one reward."

By "four uniformities" is meant uniform planting plans, uniform assignment and use of workforces, animal power, farm machines and implements; uniform management of water and combat against disasters; and uniform accounting and distributions.

By "five fixeds and one reward" is meant fixed workforces, fixed sectors, fixed expenditures, fixed output) fixed workpoints, with rewards for excess production and penalties for reduced production.

The basic point of departure for this system of responsibility is emphasis on management. In contracting for land according to workforces, production team farm work is coordinated and divided with calculation of remuneration linked to output. This means that responsibility for field care is placed on the workforce and calculation of remuneration linked to output.

Main Strengths

The main advantage of the system of responsibility of "uniformly administered linking of output to labor" is that it carries on the advantages of fixed quota contracting for labor, linking equitable division of labor and cooperation once unified deployment of the means of production has been arranged. This helps make the most of the superiority of the collective economy. It also incorporates the advantages of contracting production with individual households and contracting work with individual households, linking the fruits of labor and individual material benefits so as to fully arouse individual work initiative. It also provides for certain elements of a system of responsibility of specialized contracting, linking calculation of remuneration to output. This lays a foundation for gradual movement toward specialized contracting in a transition to a system of responsibility linking calculation of remuneration to output. Specifically, it has the following advantages.

First is no change in the primacy of production teams, and the superiority of the collective economy is able to be brought into full play. As a result of this system of responsibility's adherence to "three invariables," and "four uniformities," plowing animals, large and medium size farm machines, and water conservancy and irrigation facilitities come under unified management, assignment, and use, closely linking the use of workers and collective means of production, which makes for scientific organization, use, and development of productivity. Meanwhile, in production work, that which can be readily unified is unified, and that which can be readily divided is divided, closely linking equitable division of labor and collective cooperation, making for advantages in exploiting unused work potential and increasing labor productivity. In this way, the superiority of the collective economy can be used to fullest advantage.

Second is the direct linking of the fruits of production with remuneration for individual commune member labor. Since this system of responsibility practices

"five fixeds and one reward," embodying fairly well the principle of distribution according to work, commune member enthusiasm for work reaches an all time high. "Linking output is like linking hearts; the yellow soil is turned into gold." Since individual workpoint remuneration is figured on the basis of output or output value for commune members who have contracted for output or output value, rewards are given for output in excess of quotas and penalties levied for failure to meet quotas. Thus, it is only natural that commune members should be concerned with the entire production process and use every manner of means to make fullest use of the soil, expending additional labor and fertilizer to increase the quality of farmwork and lower production costs, adopting advanced techniques in a conscious effort to lin, organically every aspect of farmwork in order to reap the maximum harvest.

Third is the best possible linking of the self-determination of production teams and the self-determination of individual commune members, so that the small freedoms of commune members are put to real use. Since the entire process of field management has been contracted to individual commune members, commune members have self-determination in work arrangements. While assuring that a good job is done in collective production, commune members plan household sideline occupations and household chores. Commune members are very happy about this. They say that there is no stinting of work on the grain in the fields; household sideline occupations are not neglected; going to market can be done as needed; and visits with relatives are not slighted.

Fourth is cadre participation in labor helps cement ties between the cadres and the masses and raises the level of management. Inasmuch as cadres bear responsibility for the fields just as commune members do, their participation in labor, linkage with the masses, and reduction in subsidies to them makes the masses extremely happy. The masses say this is really the way cadres should be. Formerly because everyone ate out of a "large common pot," and "worked in large gangs," the cadres busied themselves all day long with getting commune members to work. Frequently in matters such as getting to work late, the lightness or heaviness of work assignments, the quality of work done, or the number of workpoints recorded, cadres and commune members or commune members and other commune members got into quarrels and fought a lot. Nowadays such annoyances are few. Now there is "going to work without sounding off, no concern with the size of jobs, no quarrels over quality of work and recording of workpoints, no need for cadres great or small to bear abuse, but living in piece and working harmoniously to till the crops." The social atmosphere has gotten better.

Problems Requiring Solution

Looked at in terms of the practical experiences of some commune members, in production teams in which a system of responsibility that is "uniformly administered and links output to labor" has been instituted, further perfection of such a system of responsibility should satisfactorily solve the following several problems at a minimum.

First, full advantage should be taken of the superiority of uniform administration. Draft animals, large and medium farms machines and implements, water conservancy and irrigation facilities, and such things that are needed in production should be in the hands of production teams, and strict management

and a system for using them should be set up. Specific persons might be put in charge of their management and use, and specialized contracts might be entered into with such persons. All production items suitable for uniform management such as forests, livestock, sideline occupations, fisheries, and industry, should be under the unified administration of production teams, which can put into effect specialized teams, specialized units, specialized households, and specialized work in a system of responsibility of "four specialities" in which calculation of remuneration is linked to output, to output value, or to profits. The various tasks in the agricultural production process should be fully divided up. Those that can be handled by individuals should be the responsibility of individual commune members; those that individuals would experience difficulties in completing should be carried out under the unified organization of the production teams. All this possesses major significance in terms of implementing a system of responsibility that is "uniformly administered and links output to labor," because it is only in this way that the smooth operation of the "four uniformities" can be assured in order to make the most of the superiority of unified administration.

Second is proper handling of the economic relationships of various contracting personnel. Within the farming industry, it is necessary to handle well the relationship between contracting for grain and for economic crops. In any given accounting unit, it is necessary to handle well the relationships among agriculture, forestry, animal husbandry, sideline occupations, fisheries, and industry. The principle for handling such matters should be diligent implementation of the principle of distributions according to work and, with consideration being given to different production administration situations in each industry, to do a good job of contracting, setting quotas, making awards, and doing work so that an overall balance will be achieved in the remuneration for labor among each industry.

Third, diligent attention to unified distribution. Output and output value contracted for by commune members must be turned over to production teams in accordance with figures stipulated in contracts. Production teams must give close attention to distribution work, calculating extremely carefully, reducing expenditures, and tightening up on subsidies in order to lighten the production team's burdens. The system of distribution must be reformed, distributions to be made on the basis of net earnings. Sensible proportions for consumption and accumulation must be decided upon. In short, while the broad masses of commune members are increasing their earnings from rewards for overfulfillment of quotas, they must at the same time get increased uniform distributions of earnings from the production for which they contracted. This is a mandatory condition for improvement of the system of responsibility of "uniform adminstration linking output to labor."

Fourth, production team cadres should strive to increase the levels of management. Practice of a system of responsibility of "uniform administration linking output to labor" is more complex than the former "big hullabaloo" situation. There is more work; requirements are higher; and there must be further strengthening of production team leadership to do a good job of uniform administration. Production teams have to come up with measures for increasing production and quality requirements as individual farming seasons and output require. They must give good technical guidance, do a good job in providing the means of production, and coordinate and solve problems that arise among contracting households and various

industries. Production team cadres must undertake responsibility for a certain amount of fields just as commune members do. They must participate in work, gain experience, and guide production. In order to arouse the initiative of cadres, the problem of subsidies to cadres has to be solved in an equitable way. Generally speaking, cadre earnings from subsidies plus contracting should not be lower than average income from labor in the production team.

9432
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BEIJING EXPERIENCING SERIOUS WATER SHORTAGE

Conservation Emphasized

Beijing BEIJING RIBAO in Chinese 18 Aug 81 p 2

[Article by Zhang Qin [1728 4440]: "Conserving the Use of Water Should be the Long Term Policy of the Beijing Area"]

[Text] People have always believed that water resources are inexhaustible and cannot be used up, and they have not paid much attention to conservation. In recent years, as cities and industrial and agricultural production have developed, the amount of water used has rapidly increased. In some areas, especially large and medium cities located in regions deficient in water, the shortage of water resources has become increasingly severe and even dangerous, causing great difficulties in national construction and in the people's livelihood. Now, the seriousness of the problem of water resources has gradually been recognized by people and has been given definite attention.

Since last year, the Beijing area has been arid and has had less rain than usual. The amount of water in the reservoirs has been greatly reduced, the underground water level has dropped, and in some regions there is a severe shortage of water for production and for living. In this situation, many units have emphasized the work of conserving the use of water. But the leadership and comrades of some units do not understand the actual situation of water resources in the Beijing area. They still do not pay enough attention to conserving water.

Water Resources in Beijing Are Not Rich

Rainfall is a source of water. The average rainfall over many years in Beijing city is over 600 millimeters, the total rainfall is 10.5 billion cubic meters, of which about 70 percent is evaporated and lost due to various causes; the remainder filters into the ground to become underground water. And part of this flows into river channels to become ground surface water.

The ground surface water formed from annual rainfall over Beijing city and the water flowing into the area from other areas (1.915 billion cubic meters) totals 4.487 billion cubic meters. Over many years the presently available water conservancy facilities have been able to intercept an average of 2.4 billion cubic meters of water annually. Some 1.5 billion cubic meters of water is flood water during flooding periods, and this amount must be drained within a short time and cannot be stored and utilized.

The underground water in Beijing city is mainly distributed in the plains (an area of about 6,400 square kilometers). The average replenishment of underground water in the plains over many years is 2.5 billion cubic meters. At present, the whole city has over 40,000 mechanized wells of various types, and it is estimated that the annual amount of water drawn is 2.5 billion cubic meters. In recent years, several wards in Beijing have drawn too much underground water, and this is especially serious in the central ward of the city. According to statistics, the cumulative amount of underground water drawn from 1970 to 1978 was 1.28 billion cubic meters, an average annual loss of 160 million cubic meters. In the situation of the overdrawing of water, a funnel region of a lower water level covering 1,000 square kilometers has formed under the suburban area of Beijing city. The average drop is 4.34 meters, and the greatest drop in the central ward is about 20 meters.

As a result of many factors, the intervals between years of water shortage in the central ward have shortened. Analysis of the data of the past more than 100 years shows a dry year about every 7 years. Analysis of the data of the past 20 years shows a year of water shortage every 5 years. The impact of the water shortage is becoming more and more serious. During the 1980 dry year, except for the Miyun and Guanting reservoirs, which still had water, rest of the medium and small reservoirs all dried up.

Amount of Water Used Is Rapidly Increasing

Beijing has three types of water users, i.e., city living, industrial users and agricultural users of water. According to statistics, in 1978, city living consumed 280 million cubic meters, industrial users consumed 1.35 billion cubic meters, and agricultural users consumed about 3 billion cubic meters. Adding the three together, in 1978, the city's total consumption was 4.63 billion cubic meters. The total consumption of water has surpassed the annual average amount of water which can be supplied.

As city construction and tourism develop and as the living standards of the people rise, the amount of water used will rapidly increase in the future. According to estimates by concerned departments, up to the year 2000, the amount of water used for city living alone each year in the whole city will reach 1 billion cubic meters (at present, each person uses a daily average of 140 liters; by the year 2000, this will increase to 400 liters). The conflict between supply and demand for water will be more outstanding. But within a short period, it will be fairly difficult to increase the supply of water because the underground waters has already been overexploited, the water level has dropped, and most of the water sources (building reservoirs) on the ground surface that are worth exploiting have been exploited; there are two or three water resources which can be developed, but the supply of water is limited. Now, people are talking about introducing water from Changjiang and Huanghe, but because the situation is complex and the project is massive, this cannot be accomplished right away.

Conserving the Use of Water Is an Urgent Task

In solving the problem of water resources in the Beijing area, since opening new sources will not produce visible results immediately, we can only work on conserving the flow. We should say that the potential for conserving the use of water in the Beijing area is still large. For example, the percentage of recycling and reusing water for industrial use in Beijing is still 30 to 40 percent, not only

far lower than the rate of repeated use of water abroad but also lower than the level in some cities in our nation. The farm villages in Beijing now have over 5 million mu of irrigated area. The average amount of water used per mu annually reaches as much as 600 cubic meters. The coefficient of utilization of the canal system is only 0.55. If the percentage of repeated use of water in industry can be increased and the coefficient of utilization of the canal system in farmland irrigation can be increased, several hundred million cubic meters of water can be conserved. In agricultural irrigation, if irrigation can gradually be changed to advanced water-conserving measures such as sprinkler irrigation and drip irrigation, then the amount of water conserved will be more noticeable (developing sprinkler irrigation and drip irrigation involves problems of investment, materials and increased shipping costs, and it can only be gradually realized). As the green areas of the city expand, the amount of water used to irrigate the green areas also increases year after year. At present the irrigation basically consists of flooding and a constant flow of water, so a lot of water is used, but if the irrigation is changed to sprinkler irrigation, a lot of water can be conserved. Although the proportion of water used for city living is the smallest among the three types of water users, the waste is astonishing. The waste of water at the agencies and universities and colleges that have their own wells is especially serious. At present, the residential area in Beijing city is 20 million square meters; most houses use collective water meters and they share the cost equally. At a few units which have a "water utility fee", the residents do not care how much water is used: Each person pays a flat monthly fee of 1 jiao or 5 fen, and the rest is paid for by the enterprise unit. According to surveys, families with a "water utility fee included", collective water meter families and families with their own water meters use water very differently. The highest is 610 liters per person per day, the lowest is only 45 liters. Thus the potential for conservation is great.

In general, when no additional water source is available, conserving the use of water is the practical and effective way to ease the shortage of water resources in the Beijing area (even if the water source is sufficient, one should not be wasteful). If the whole city will persist in constantly conserving water, then the limited water resources in the Beijing area can more fully serve city construction and the people's livelihood.

Shortage Worsening

[Beijing BEIJING RIBAO in Chinese 28 Aug 81 p 1

[Article: "Water in the Reservoir Drops Sharply; Underground Water Level Drops Greatly; the City's Water Shortage Worsens Day By Day; Conserving Water Is a Task That Should Be Emphasized by Every Family"]

[Text] Staff reporter Wang Yonghua [3769 3057 5478] has learned from the city's water conservancy department that at present the city faces a crisis in water sources unprecedented since the founding of the nation. The planned use of water and conserving the use of water have become big tasks that should be emphasized by every family in the city.

The average annual amount of rainfall over many years in the city is 626 millimeters, but from August of the year before last to August of this year, the cumulative amount of rainfall over the 2 years in the city was only 700 millimeters. Since the beginning of summer this year, this city has not had a soaking rain. On the upper reaches

of the Guanting reservoir and the Miyun reservoir that serve as the main sources of ground surface water in the city, there was no flood during the flooding season and basically there were no torrential rains or flood water. At present, except for Guanting and Miyun, most of the city's 84 large, medium and small reservoirs are dry; some have a little accumulation of water, but the water is all below the dead water level and cannot be released.

At present, how much ground surface water that can be used is there in the whole city? According to statistics released at 0800 on 26 August, the flow of water into the Guanting reservoir was 19.9 cubic meters per second, the total amount of water in storage was 269 million cubic meters; subtracting the dead capacity of 210 million cubic meters of water that cannot be released, the usable portion of water amounted to only 59 million cubic meters. The flow of water into the Miyun reservoir was 21.1 cubic meters per second, the total amount of water in storage was 514 million cubic meters; subtracting the dead capacity of 437 million cubic meters, the usable portion of water amounted to only 77 million cubic meters. The total amount of usable water in the two reservoirs was only 136 million cubic meters, or 620 million cubic meters less than the same period last year. This is the lowest level in this period since the reservoirs were constructed.

Facing us is a serious shortage of underground water in the Beijing area. Because of many years of overexploitation, a nearly 1,000-square kilometer funnel area of a lower water level has already formed under the city's suburbs. Since the beginning of this year, the drop in water level has become more serious. During the rainy season, over the years the water level has risen, but this year it has continued to drop, and it is generally lower by 2 to 3 meters than the same period last year. In serious regions, the drop has reached 5 to 6 meters. As the water level drops, some of the wells cannot produce any water or have only the original amount. To solve the "water shortage" underground, the city committee and the city government have taken emergency measures and have established plans for water conservation. Conserving water is the responsibility of everyone. All of the people in the city must contribute toward conserving water.

9296
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ACTIVE MEASURES URGED TO PREVENT COLD DAMAGE TO CROPS

Fuzhou FUJIAN RIBAO in Chinese 20 Aug 81 p 1

[Article by staff reporter: "Expect the Worst, Actively Prepare Against Autumn Cold; Provincial Government Office Holds Discussion Meeting To Point Out that Autumn Cold Front May Come Early; Each Locality Must Be More Alert, Take Measures to Prevent Damage"]

[Text] "Expect the worst, actively prepare against autumn cold in order to avert peril." This was the unanimous view expressed at the discussion meeting on "how to do a good job of preparing late rice against autumn cold" held by the provincial government office on the 17th of this month. Those participating in the meeting included the leadership, experts and technical personnel from the provincial agricultural committee, the provincial agricultural department, the provincial Agricultural Science Academy and the provincial Meteorological Bureau.

At the discussion meeting, the comrades of the provincial Meteorological Bureau pointed out that based on the comprehensive analysis of this year's weather chacteristics of a warm spring, a "cold May" and a cool summer combined with the characteristics of atmospheric circulation, forecasts show that this year, 23-degree low temperatures may occur during the middle 10 days of September in our province's northern regions, 3 to 5 days earlier than usual. In the southern regions, 20-degree low temperatures many occur during the last 10 days of September to the beginning of the first 10 days of October, 4 to 6 days earlier than usual. The October temperatures throughout the province will be lower, and this will be unfavorable to the growth of late rice in our province. The comrades of units such as the provincial agricultural department and the Agricultural Science Academy consider that the progress in transplanting late rice this year has been achieved earlier than in previous years, "fields past autumn" have been decreased by over 600,000 mu from last year, field management has been timely, the seedling conditions are good, and all this has created favorable conditions for defense against autumn cold. But this year the area of hybrid paddy rice and guichao No 2, which are not tolerant to cold, is relatively large in the northern regions.

In the southern regions, there are more varieties of the late-maturing baotai, guang bao, and jin nan wan varieties. Also, the quality of some of the seedlings is poor. During the middle and last 10 days of July, the temperatures at each locality were low, the leafing rate of the rice seedlings was slow, tillering was late, and the heading time of late rice may be delayed. There are still some 500,000 mu of late

transplanted "fields past autumn" throughout the province. These situations are very unfavorable for late rice to resist cold. Comrades attending the conference gave the following opinions on how to prevent damage by autumn cold.

1. The leadership at each level must increase understanding of the importance of defense against autumn cold, remain alert, conscientiously deal with the situation, overcome the paralysis and take active measures to prevent cold damage by disasters, so the production task of the late season is heavy. Carrying out the work of defending against autumn cold is a key measure to assure a bumper harvest during the late season and make up the loss of the early season. The leadership at each level must expect the worst, go deeply into the frontline of production, mobilize the masses to summarize experience and lessons, and make good, timely ideological preparations to take concrete measures so that there will not be any worry afterward.

2. Strengthening field management during the middle period of growth and strengthening the cold resistance ability of late rice are urgent measures to be taken now to defend against autumn cold. Most of our province's late rice are now in the peak period of tillering; those plants that tillered early are entering into young panicle differentiation. Each locality must strengthen management according to the status of growth of rice seedlings to stimulate early heading in order to avoid damage from the cold. Late rice that has been transplanted late must be treated urgently; intertilling and sidedressing of fertilizers must be timely in order to stimulate early growth and fast development. When there are enough seedlings or when the time for baking the field has come, there must be concentration on baking the field in order to stimulate the roots, make the stalks healthy and control ineffective tillering. More phosphorous and potassium fertilizers must be applied, fertilizers for growth of panicles and fertilizers to preserve the flowers must be applied well by observing the seedlings so as to stimulate the growth of large panicles and plenty of grains. During the panicle-bearing and heading and filling period, sidedressing outside the roots using calcium superphosphate, potassium dihydrophosphate and urea must be widely popularized in order to nurture the roots and preserve the leaves, increase the capability to resist cold, and increase the fruiting percentage and the thousand-grain weight; there must not be unilateral application of nitrogenous fertilizers during the latter growth period, as this will cause the plants to remain green and grow too prosperously, delaying the heading period and causing unnecessary loss.

3. When autumn cold arrives, cold-resistant measures must be actively taken. During the period of low temperatures in the autumn, the masses must be mobilized to irrigate and fill the fields with a water layer of 3 to 4 cun when the rice plants in the fields are opening, heading and flowering so as to maintain the temperature and prevent cold damage. For cold fronts, water must be sprayed on leaf surfaces, the temperature of the panicles must be increased to stimulate flowering and pollination. Mechanical measures must be taken to artifically assist pollination using pulling strings or bamboo poles to stimulate the discharge of the pollen and increase the fruiting percentage. Each locality also has many other effective methods to prevent cold damage learned by experience, and these methods must be summarized and popularized in time.

4. Concerned departments must coordinate efforts closely and strengthen scientific and technological guidance. The meteorological deparments at each locality must conscientiously do a good job of medium and short-range weather forecasting, pay close attention to the movement of autumn cold, and report the situation in time.

Each agricultural department must strengthen observation of the condition of the seedlings, and propose defensive measures according to the status of the seedlings and the movement of autumn cold; techniques must be taught through broadcasts, by setting up information desks, and providing mobile guidance units to go into the villages. The supply and marketing departments of each locality must do a good job of supplying the needed phosphorous and potassium fertilizers and potassium dihydrophosphate.

9296
CSO: 4007/587

PREVENTION, CONTROL OF DISEASE, INSECTS IN LATE RICE URGED

Fuzhou FUJIAN RIBAO in Chinese, 28 Aug 81 p 1

[Article by staff commentator: "There Must Not Be Any More Mistakes in the Prevention and Control of Diseases and Insect Pests"]

[Text] The provincial government has issued an urgent notice asking the leadership at each level to take responsibility for leading the cadres into the frontline to do a good job of prevention and control of diseases and insect pests in face of the lesson of damage and loss due to the rampant occurrence of rice blast in early rice and the trend of disease and insect pests occurring in late rice. It has also emphatically pointed out that this is an urgent task in the farm villages and there cannot be any more mistakes!

There were many reasons for this year's epidemic of rice blast in our province's early rice. The main reason was bad weather. But besides the objective reasons, there were also subjective reasons. For example, in some places, the ideology of the leadership was paralyzed, the leadership did not understand the situation, and prevention and control were not forceful. This situation was not unique. Therefore, the provincial government's urging that there must not be any more mistakes in the prevention and control of diseases and insect pests in late rice is entirely appropriate. It is also asking the leadership at each level to clarify its duties in order to undertake economic work effectively.

In order not to make any more mistakes, first the leadership at each level must cast aside any thought of depending upon luck and overcome the ideological paralysis. During this year's early season, rice blast occurred similarly at many places, so why was it that some places suffered especially serious loss while other localities reduced the loss? Even some of the "old diseased areas," such as Xinquan Commune in Liancheng, were able to overcome rice blast rice disease during the early season this year and achieve a bumper harvest. The difference was that the leadership in some localities kept a higher guard against natural disasters and used forceful measures of prevention and control. Conversely, the leadership in some localities kept their hopes on good weather, lacked the ideological preparation to resist disasters, or believed that since the responsibility system is now in effect, the farmers could prevent insects and control disease by themselves; the thinking was paralyzed, the measures were not forceful, and losses resulted. This lesson should be remembered. It is noteworthy that some comrades still have thoughts of depending on luck and their thinking is still paralyzed; they believe that rice blast occurs easily during the early season but not necessarily in the late season. Actually,

this view is one-sided. Regarding the occurrence of rice blast disease, generally it is serious during the early season and light during the late season, but this is not an absolute. Situations of "late occurrence being more serious than early occurrence" have also happened. Besides, rice blast as serious as it was in the early season this year has rarely been seen for many years; there was a lot of accumulation of bacteria. Furthermore, most of the single and double season late rice are the varieties heterosis and guichao No 2, which have relatively poor resistance. And in addition, in the particular weather conditions that have existed since summer, the danger of sudden occurrence of rice blast has been present. According to surveys and analysis by the provincial agricultural departments and concerned specialists, disease and insect pests during the late season this year will be more serious than previous years. Some of the "two diseases and two insect pests" that pose the greatest threat to increased yields of later rice (rice blast disease, bacterial blight of rice, paddy rice borer, rice leafhopper) have already begun to spread, while some are about to begin. This cannot be neglected for a minute. At the same time, the passive attitude of doing nothing in the face of natural disasters must be prevented, spirits must be heightened, and the prevention and control of diseases and insect pests as a key link in achieving a bumper harvest during the late season and in realizing "the production of more late season harvest than the early season harvest" must be concretely and conscientiously grasped.

In order not to make any more mistakes, the leadership must conscientiously improve the style of work, go deeply into the frontline and the sites to solve the problems. Staying in meetings all day long, not going down to the fields to survey and study, going to the fields but "leaving early and returning late," hopping here and there where there are disasters but not seeing them, not really knowing and not really doing any work even when disasters have occurred, chatting without saying anything and "studying, studying" are all bad workstyles that have deviated from the masses and from the actual situation, and these must be changed. The main leadership of some counties and communes have led the leadership and cadres of concerned departments to go to the villages in groups, to go around the various places to work, to mobilize the masses to prevent and control diseases and insect pests wherever they occurred. When there has been a shortage of capital, farm chemicals or machinery, the leading cadres have done everything possible to help solve the problems. This method is very good, and it can be imitated. The post responsibility system of the cadres must be established soundly. Some cadres care only about contracting "responsibility fields" but forget about the responsibility they bear. This is wrong. The basic level cadres must insist on first doing the work well and must place the benefits of the people and the masses in first place.

In order not to make any more mistakes, agricultural sicence and technology must be popularized. Forces of all sides must be mobilized. Each locality must think of ways to fully develop the function of agricultural technology departments and personnel. The knowledge of scientific planting must be spread to the thousands of families and tens of thousands of families in such ways as technical classes, distribution of printed scientific and technical knowledge and information, and "field doctors." Some units in the counties of Ningde, Shunchang, Shaowu have established a technical agricultural service company which has signed technical contracts and disease and insect pest prevention and control contracts with commune brigades and farmers, and good results have been obtained. Their experience is worth popularizing. Concerned departments of supply and marketing, agricultural technology, transportation and banks should conscientiously provide capital, supply farm chemicals and

chemical fertilizers, and ship the chemicals and machinery needed to prevent and control disease and insect pests at the frontline of agricultural production in time.

In order not to make any more mistakes, the leadership and cadres must also study science themselves, obtain some knowledge about prevention and control of diseases and insect pests. The experience of many localities shows that only by organizing well the scientific learning of the cadres can the commune members be more effectively organized to learn science, strengthen guidance in scientific planting, and improve the level of scientific planting. This not only affects the production problems of one season or one year, but is a capital construction that has profound significance in realizing agricultural modernization.

"Seizing food grains from the mouth of insect pests" concerns the problem of the gain or loss of several hundred million jin of food grains. We hope the leadership at each level and the broad number of cadres in farm villages can effectively lead agricultural production under the guidance of the spirit of the Sixth Plenum, undertake well the work of prevention and control of disease and insect pests, exert efforts to achieve bumper harvests in the late season, and strive toward a greater increase in this year's agriculture, forestry, livestock production, sideline production and fishing!

9296
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LONGXI PREFECTURE OVERFULFILLS FOOD CRAIN PROCUREMENT TASK

Fuzhou FUJIAN RIBAO in Chinese 23 Aug 81 p 1

[Article by the reporting group of the Food Grains Bureau of Longxi Prefecture: "Longxi Prefecture Completes Procurement of Summer Food Grains and Oil With Surplus"]

[Text] As of 17 August, Longxi Prefecture has stored over 430 million jin of summer food grains, overfulfilling the procurement task. Over 39 million jin of peanuts have been stored, completing the peanut procurement task with a surplus of 50 percent. Also, the quality of the food stored was better than in previous years.

This year, Longxi Prefecture established the agricultural production responsibility system on an overall basis and popularized the procurement contract system for agricultural sideline products, fully mobilizing the enthusiasm of the masses and expanding the planting of economic crops and reducing the area of food grain fields. The total yield of summer food grains rose steadily, and both the unit yield and the total yield of peanuts surpassed the highest level in history. After the bumper harvest, each county and city widely propagandized the procurement policy of food grains and oil according to the principle of "caring about three aspects together," and encouraged commune members to sell more food grains and oil. Changtai and Longhai Counties, which are the major food-grain-producing regions, have 48 one-season families that sold 10,000 jin of food grains; 35 brigades submitted 1 million jin for sale to the state in one season and 6 communes submitted 10 million jin for sale to the state in one season, including, the Jiaomei Commune which sold 20 million jin of food grains to the state. Zhangpu County stored over 63 million jin of summer food grains, surpassing the task by over 15 million jin—over 7 million jin more than the highest year in history. In the counties of Dongshan, Yunxiao and Zhaoan, which are the major peanut-producing regions, many commune brigades doubled or tripled the peanut procurement task. The procurement task set for peanuts in Shaoan County was 5.3 million jin, and the amount stored reached over 13 million jin. The quality of the peanuts was good: each peanut was full, impurities were few and the dryness was sufficient—such quality has rarely been seen in recent years.

The food grains department of Longxi Prefecture undertook the procurement work early and did the work carefully in face of the new situation of an increase in procurement accounting units and an increase in the amount stored. At present, the work of storing the food grains and oil of the whole prefecture is continuing.

9296
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BUMPER HARVEST OF PINEAPPLE ANTICIPATED

Fuzhou FUJIAN RIBAO in Chinese 23 Aug 81 p 1

[Article by Li Jinhe [2621 6855 0735] and staff reporter: "A Bumper Harvest of Our Province's Famous Fruit, Pineapple; Total Yield Increases By Over 20 Percent; Many Bumper Harvest Fields Producing 2,000 to 3,000 Jin of Pineapples Per Mu Have Emerged"]

[Text] Pineapple, one of our province's six famous fruits, is now entering the harvest season. According to analysis of the field conference on pineapple production throughout the province, this year the yield of pineapples throughout the province can reach over 80,000 dan, an increase of more than 20 percent over last year. In some places, large areas of bumper harvest fields with per mu yields of 2,000 to 3,000 jin and more have emerged. Some of the pineapples weigh up to over 4 jin.

At the conference, representatives of the Dananban farm of Zhangpu reported that the 70 mu of pineapple fields of their farm, in the Shangpu farming area, can achieve a per-mu yield of over 3,000 jin. The Nanqing fruit farm of Jintao Commune in Nanan can produce a total yield of 2,500 dan from its 117 mu of pineapples harvested this year--a per-mu yield of more than 2,100 jin, including 10 mu of bumper harvest fields which can produce over 3,000 jin per mu.

Comrades attending the conference, in analyzing the reason for this year's increased yields of pineapple, believe that it is mainly due to the implementation of the various forms of production responsibility system and the implementation of scientific planting of fruits. Experts attending the meeting approved the method of mutual stimulation, the method of using the short to nurture the long, and using fruits to nurture fruits by companion planting of litchi, longan, mango and such fruit trees in the bumper pineapple harvest fields. They believe that this was beneficial to the growth of both pineapple and fruit trees. The 1,000 longan trees planted in 85 mu of land of the Guanxun Brigade of Cecao Commune in Tongan now in production can produce a harvest of 45,000 jin.

The leading comrades of the provincial agricultural committee and the provincial agricultural department offered some opinions concerning the development of pineapple production. They pointed out that although pineapple is one of the six famous fruits of our province, for a long time not enough attention has been given to it, so it was suggested that the leadership at each level of the main producing region strengthen the leadership in pineapple production.

9296
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INTENTION TO EXPAND COTTON AREA IN 1982 DISCUSSED

Shijiazhuang HEBEI RIBAO in Chinese 15 Sep 81 p 1

/Article: "Area Planted to Cottton to Be Expanded Beginning Next Year Provincial CCP Committee and Provincial Government Convene Provincewide Cotton Conference"/

/Text/ Acting in accordance with the guiding spirit of Central Committee leadership and the realities of Hebei Province, recently the Provincial CCP Committee and Provincial People's Government convened a provincewide cotton conference, proposing expansion next year of the province's cotton field area to more than 10 million mu. Efforts will be made to win a total output of around 7 to 8 million dan of cotton from 11 million mu. After several years, efforts will be made to increase the province's total cotton output to more than 10 million dan. Comrades attending the conference believe this to be a major strategic measure for erlivening the province's economy and for making rural villages become prosperous with all possible speed.

Foremost party and government leadership comrades from 8 cotton growing areas, 89 cotton growing counties, and agencies directly affiliated with the province attended this conference. Provincial CCP Committee and Provincial People's Government leadership comrades, Li Erzhong /2621 1422 6850/, Yang Zejiang /2799 3419 3068/, and Wang Kedong /3769 0460 2639/ attended the conference, Li Erzhong and Yang Zejiang making speeches.

The conference agreed that development of cotton production and expansion of the cotton growing area will be of major practical and immediate significance, and of far reaching historical significance in freeing the province's agriculture from "leftist" fetters in a thorough breaking away from the narrow road of a grain economy; will make the most of the province's advantages, will enliven rural villages and enliven the national economy; and will satisfy the needs of the country in building the four modernizations, making the broad masses of peasants in cotton growing areas become prosperous. This is not solely a matter of cotton output, nor is solely an economic matter, but rather a political matter as well. It is one of the major current tasks in returning agriculture from chaos, and a strategic measure for promoting development of the province's economy.

The conference analyzed reasons for the decline in Hebei Province's cotton output and the favorable conditions for future increases. It noted that Hebei Province located on the North China Plain has the climate and the soil necessary for the growing of cotton, and that the central and southern regions of the province, in particular, were termed a "cotton sea" in the past. Historically, cotton growing covered an area of 17 million mu, and the province's cotton output held first place nationally.

However, after the beginning of the "Great Cultural Revolution," as a result of promotion of a full panoply of "leftist" things by the former people in charge of the Provincial CCP Committee, and sole emphasis in agriculture on the growing of grain for which high requisition procurement was set, grain supplanted cotton and the cotton field area decreased. Furthermore, most cotton came to be grown on second rate and marginal land, with the result that cotton output seriously dropped. For the 3 year period 1977 to 1979, per unit yields were the worst in the country, and total output also fell to seventh and eighth position in the country. In 1980, following institution of the spirit of the Third Plenary Session of the 11th Party Central Committee, and vigorous promotion of a system of responsibility linking remuneration to output, cotton production saw revival and development. Per unit yields reached an all-time high. However, since the influence of "leftism" had not been thoroughly expunged, the cottonfield area remained small, and total output has not yet returned to the all-time maximum of 6 million dan. The conference agreed that we must do all possible to catch up, and that we must learn from provinces throughout the country that are advanced in the growing of cotton, learning from Shandong Province, in particular, so that we will be able to increase the province's cotton output at a rapid pace within a fairly short period of time. Hebei Province has numerous advantageous conditions for the growing of cotton, such as suitable natural conditions, production conditions in cotton growing areas that are greatly improved over what they formerly had been, and a peasantry in cotton growing areas that possesses abundant cotton growing experience. Of special importance is that since the Third Plenary Session of the 11th Party Central Committee, readjustment of cotton growing policies and vigorous promotion of various forms of a system of responsibility that link remuneration to output have vigorously aroused the initiative of the broad masses of peasants to develop cotton production. If only we diligently carry out the line, program, and policies of the Third Plenary Session of the 11th Party Central Committee, emancipate our mentality, and break through "leftist" conventions, extremely rapid increase in the province's cotton production will be fully attainable.

The conference heightened understanding and, following study and discussions, proposed discussions with cotton area communes for next year's development of cotton acreage and preliminary ideas on total output.

The conference noted that readjustment of farming patterns and raising the province's cotton output in the shortest period of time are extremely arduous tasks for which the efforts and struggle of the entire party and the entire people must be mobilized. To this end, it is necessary, first of all, to do a good job of restoring politics and ideology to the proper path, to further emancipate mentality, to break through old conventions, and to eradicate outmoded ways of doing things. There should be vigorous propagandizing of the great political and economic significance of developing cotton production to coordinate the thinking of the broad masses of cadres and people in cotton growing areas. Second, there should be further extension and improvement in all forms of a system of responsibility for production to arouse, in a fundamental way, the enthusiasm of the broad masses of cotton growing peasants. Third is the need to make arrangements about the land to be used for grain and cotton production, particularly arrangements pertaining to cotton and wheat, and cotton and other economic crops. Once the grainfield area has been readjusted, efforts should be directed to per unit yields, increase in total output, assurance of fulfillment of quotas for the contracting of work in grain production, and efforts made to follow a strategic policy of using cotton to boost production of grain, and using grain to assure cotton output. Fourth is formulation and implementation of a series of

consummate economic and technical measures for the development of cotton production, devoting all necessary time to the improvement of production conditions and increasing capacity to withstand disasters; vigorous propagation of superior cotton varieties, and popularization of new cotton growing techniques.

The conference reiterated the need for all echelons of CCP committees and government in cotton growing areas to make earnest efforts to strengthen leadership in cotton production, so that not only one or two comrades have special responsibility for it, but so that the leadership group as a whole devotes attention. Both grain and cotton must be given attention at the same time, with the emphasis going to cotton. Under the unified leadership of each echelon of CCP committees, agriculture, water conservancy, farm mechanization, supply and marketing, commerce, public finance, banks, the chemical industry, industry and communications, and the women's federation must jointly wage war and arduously struggle, making their maximum contribution to speeding up the province's cotton production. The conference also called upon all jurisdictions to give earnest attention to management during the late season of this year's cotton crop, using every means to win a bumper harvest in cotton this year to create favorable conditions for an expansion in next year's cotton growing area.

9432
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SHENQIU COUNTY REPORTS BUMPER WHEAT HARVEST

Beijing GUANGMING RIBAO in Chinese 26 Jul 81 p 1

[Article: "Wheat Yields Large Bumper Harvests; Science Realizes Great Achievements; Shenqiu County Farmers Enthusiastically Invite Prof Huang Guangzheng [7806 0342 2973] to Join the 'Feast to Celebrate the Bumper Harvest'"]

[Text] Correspondents Sun Guande [1327 0385 1795] and Li Tongliang [2621 0681 5328] report: After the bumper harvest of wheat this year, the Shenqiu County committee of Hebei Province sent a car to pick up Prof Huang Guangzheng [7806 0342 2973] of the Baiquan Agricultural College who was invited to come to the county to joing in celebrating the bumper harvest. Everywhere old Huang went, he was invited by commune member families to attend their "bumper harvest banquest" and drink "wine to celebrate the bumper harvest."

Pro Huang Guangzheng is the breeder of the superior wheat variety "bei nong 3217". This year, the commune members of Shenqiu County invited scientific and technical personnel in agriculture to guide them in each production link from sowing to harvesting of wheat. Because of this and other reasons, although drought and dry hot winds which had not been seen for many years attacked this region severely, an unprecedented bumper harvest was produced. The average per mu yield of the whole county surpassed 500 jin, an increase of 40 percent over the big bumper harvest realized in 1980. The total yield increased by 100 million jin. The variety "bei nong 3217" has a stronger resistance to drought and dry hot winds, and increased yields were especially outstanding; the per mu yield was generally over 600 jin, the highest reaching 1,200 jin.

After the bumper harvest, commune members said in summary: "This year's bumper harvest of wheat was due to policy on the one hand and to science on the other hand." Many commune members wrote letters asking the county committee to invite the breeder of "bei nong 3217" to visit. Commune member Mu Lanzhi [4476 5663 5347] of the Liubei Brigade held a movie entertainment evening and invited Prof Huang Guangzheng and all the agricultural technicians of the agricultural technology station of the commune to sit in the middle. Mu Lanzhi stood in front of the microphone and said happily: "I have a family of five; last year we received 500 jin of wheat; this year we harvest 4,100 jin; next year, I want to strive toward 1,000 jin of wheat per person, and I hope the scientific and technical personnel will help us a lot."

When old Huang left Shenqiu, the county committee persented him with a flag and a plaque with the words "cultivating and breeding superior varieties with outstanding

achievements" written on it, on behalf of the people of the whole county. This old professor, who was criticized and struggled against for many years as a "reactionary authority" during the period of rampage by the "gang of four," was moved to tears and said: "The responsibility system has made me see the new future of our nation's agricultural development. I must continue to make new contributions to agricultural science and technology."

9296
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DEVELOPMENT OF PROVINCE'S FISHERY RESOURCES EMPHASIZED

Wuhan HUBEI RIBAO in Chinese 16 Aug 81 p 1

[Article by Qiu Zhiquan [5941 1807 6898], engineer of the provincial Aquatic Production Bureau: "Fishery in Ponds Is the Essence of Fresh Water Cultivation--A Viewpoint on Spurring the Development of Our Province's Fishery"]

[Text] Fresh water fish is the way to riches. For thousands of years, a widely popular saying in our nation has been: "Raising fish and planting bamboo bring a thousand fold benefits." During the Period of the Warring States, Fan Li [5400 5867] of the Kingdom of Zhao gave up his official position to become a civilian; he went to the Kingdom of Qi to cultivate fish and he became a wealthy man. Someone asked him: "You have a lot of money and you have accumulated a lot of gold; what is your secret of becoming rich?" He answered: "I have five ways of managing my life, and raising aquatic life comes first." Raising aquatic life is cultivation of fish. Now, farmers of some localities have also made such an evaluation: "To become rich, riches come from the water." This vividly explains that fully utilizing the resources of water regions and developing fresh water cultivation are an important means of economic business for a prosperous farm village economy.

Our province is one of the key fresh water fishery regions of the whole nation. The province has many types of water regions, the areas are large, aquatic life resources are rich, and the climate for fishery resources is suitable for the raising and domestication of regional fish, such as those from the north, up to Heilongjiang, and from the south, down to Hainan Island. The province has unique and superior conditions for the development of fresh water fish cultivation.

To develop the superiority of our province's water resources and hasten the development of fishery, I believe that in the practical situation where water bodies for fishery are greatly decreasing and fishery resources are dramatically changing, the development of production cannot just rely upon the originally available extremely unstable production base and it cannot follow the old production system and business management method: we must begin by actively readjusting the production structure and the distribution, and open up a new situation for fishery development. In the economic system, we must allow many economic elements and diversification to coexist, develop multiple channels of raising fish; the state, the collective and the commune members should work together; specialized professions, sidelines, farm villages and cities and suburbs must simultaneously advance. As a policy in guiding production, intensive cultivation in small bodies of water and rough propagation in large bodies of water should be combined. The key to development in ponds, which mainly involves

fine cultivation and high yields, is to actively create conditions for gradually establishing an artificial ecological system in the water regions, and then to complete the transition from traditional natural fishery to ecological fishery. This is an important aspect of the strategic readjustment of fresh water fishery at present.

Fishery in ponds includes diked ponds in farm villages, commercial fish bases, fine fish cultivating ponds artificially dug in suburbs, fish ponds of commune member families, small area lakes, reservoirs, ditches and canals, etc. They are the essence of our nation's traditional fresh water culture. The main characteristics of raising in ponds are the following:

1. Ponds, which are small in area, can provide a good ecological environment under artificial control, they possess the basic conditions for intensive production, and they have obvious superiority for fine cultivation and high yields. Among the various water regions presently available for cultivation in our province, the relative potential for increased yield is high for small water surfaces. The potential of the small water surfaces is the greatest for diked ponds in farm villages and fish ponds for fine cultivation. Therefore, they are where the main hopes for spurring the development of our province's fishery lie.

2. Small fish ponds are widely distributed, they are suitable for management by thousands and tens of thousands of families, and cultivation in ponds is a business possessing mass character. Last year, the 28 families of the four production teams of the Pingyuan Brigade of Zishi Commune in Jiangling County dug fish ponds in private plots and in scattered and unused land behind the villages; each family averaged 3 fen of land, and the average yield of fish was 220 jin. Jiangling County popularized the experience of these families, and fish cultivation by commune member families rapidly developed to over 33,400 families, constituting one-third of the farm families of the whole county.

3. Cultivation in ponds pertains to a labor-intensive productive sector. It is beneficial in solving the problem of finding outlets for surplus labor in farm villages.

4. Cultivation in ponds can fully utilize bodies of water: it can encompass development of pearl culture, aquatic economic plants, multiple aquatic production and increase economic gain. The 137 mu of diked water ponds of the October Brigade of Xishui County employed 42 laborers to raise fish. In 1980, the per-mu yield was 1,066 jin and each laborer achieved a production value of 1,955 yuan, three times the average production value of laborers in the brigade. The Zhuqiwu Brigade of Guangji County, the Sanzhou fish farm of Jiangling County and similar units utilized ponds to cultivate fish and pearls in combination; each mu of water surface produced an annual production value of above 2,000 yuan, while the high-yielding fish ponds reached a production value of over 3,900 yuan.

5. In the development of fishery in ponds, the beds and embankments of ponds can be fully utilized for planting economic crops, thus realizing a combination of fishery, agriculture, forestry, livestock production and regional handicrafts production, forming a benevolent material cycle and a production structure of macroagriculture of comprehensive utilization. For example, the traditional fishery-mulberry gardening-sericulture in the Peral River Delta and the Taihu waterways region and the

comprehensive business of fishery-vegetable planting-hog raising at some places in our province are all ideal models of three-dimensional comprehensive agriculture. They can create higher agricultural and social productivity. In this sense, developing cultivation in ponds is beneficial to hastening the progress of modernization of fresh water fishery and also to the formation of a good macroagricultural ecology.

Generally speaking, the progression from catching fish to cultivating fish and then developing from rough cultivation to fine cultivation and high yields centered around ponds is definitely not made just because of changes of natural resources; these are not expedient measures forced to be taken after a drop in the yield of natural fishery production; they more importantly reflect the natural pattern of the development of fresh water fishery. Actually, in the present situation where the productivity level is still very low, fishery in ponds has already demonstrated its place and function in the entire range of fresh water fishery. For example, in Guangdong Province, which is the most advanced region in fishery in ponds in our nation, the area of ponds used for culture is only one-third the total area of cultivation throughout the province, but the yield of fish from ponds has for many years constituted over 90 percent of the total yield of fresh water fish of the whole province. Although our province's cultivation in ponds is still in a low-yielding and backward state, it already produces two-thirds of the yield while occupying less than one-third of the area of fish culture in the province. In 1980, the entire province's yield of cultivated fish showed a net increase of 33.7 million jin over the previous year, and the increased yield from cultivation in ponds alone was 29.5 million jin, or 87 percent. This further shows that in the overall planning of the development of fishery, emphasizing this key point of cultivation in ponds with the goal of fine cultivation and high yields and taking corresponding forceful measures to exert efforts to increase the level of production are reliable ways to quickly solve the problem of the masses in having fish to eat.

Based on past experience, the development of cultivation in ponds in our province requires concentrating on the following four aspects simultaneously: First, in the expansive regions near the lake, we must follow the principle of giving consideration to regulating both livestock raising and fish cultivation and to the benefits of both agriculture and fishery. In the process of returning cultivated land to fishery in accordance with the plan for readjusting the internal structure of agriculture, we must utilize some of the low lake fields and low fields in protective embankments in lakeside areas that cannot be assured of harvests, beaches of shallow lakes, low-yielding marshland, fields affected by flying sand, and large areas of abandoned ditches to dig concentrated fine cultivation fish ponds in the expanses, thus forming a commercial fish base of high and stable yields. using the Jianghan Plain as the main body of water. Second, the present diked ponds should be rebuilt extensively so that the ponds will be 3 meters deep and can store 2.5 meters of water and so that they can satisfy the basic requirements of preserving water, preserving fertilizers and preserving fish. Where ponds were blindly filled in the past, some ponds must be reinstalled in accordance with the plan based on present conditions. These construction projects should be included in the farmland capital construction plan and should be insisted upon in ordinary years. Third, regarding policy, the commune members in farm villages should be actively encouraged to utilize private plots or scattered pieces of unused land, waste ditches, panhandle fields in front of villages and behind land bends uniformly arranged by the collective to dig or rebuild family fish cultivation ponds. Fourth, the large and medium cities and towns where the

seats of the prefecture government and the county government are located should continue to build high-yielding fishery bases of mainly fine cultivation fish ponds, and we should campaign in a big way for social organizations in cities to utilize their own various favorable conditions to develop self-sufficient cultivated fish production. If, after several years of efforts, the total area of high-yielding and stable fish ponds formed by these methods reaches 2 million mu, then a reliable foundation for the production of about 600 million jin of fresh fish can be established, along with an increase in water storage of over 1.5 billion cubic meters capacity, thus benefiting increased yields in agriculture. Also, according to the experience of managing Douhua Lake by Songzi County, by building fine cultivation fish ponds and implementing the three alliance measures of eradicating snails with "deep water, covering of land, biological eradication," snail fever can effectively be controlled and eliminated in the lake regions. Thus, building fine cultivation and high-yielding ponds is a project that brings many benefits, profits both agriculture and fishery, and has important practical and strategic significance.

To fully develop the superiority of fine cultivation and high yields of fishery in ponds, implementation and perfection of the various forms of production responsibility system must be solved as an outstanding problem at present. Ponds for fishery are small in size, scattered, and cover a broad area, so policy measures of greater adaptability and more versatility must be adopted. If the masses are willing, in most places, the methods of bidding for contracts or contracting production by families and contracting cadres to be in charge of families can be practiced in order to mobilize the enthusiasm of the broad masses. The key to realizing fine cultivation and high yields is to appropriately solve the problem of feed for raising fish. It is suggested that the farm village production teams keep sufficient feed for raising fish. Localities where conditions permit can zone a definite amount of land as feed grounds. The state should provide feed according to the standard of a jin of fish and a jin of food grains when procuring fish. Fishery production units must utilize low banks of earth between fields and land between fields to plant feed grains, and these should not be procured or used to substitute for food grain rations. Also, activities for the scientific cultivation of fish must be launched. New varieties that have strong resistance, grow quickly, and are tasty should be raised; work of a mass character to prevent and control fish diseases should be actively launched. At the first level communes, aquatic technique popularization stations must be established; technical personnel must be trained extensively to satisfy the urgent need of the masses to learn scientific cultivation of fish and popularize advanced techniques.

The large and medium lakes, reservoirs, harbors and canals of our province constitute two-thirds of the water surface that can be used for aquatic culture. Therefore, while developing fishery in ponds, we must also fully develop and utilize these large and medium water bodies, suiting measures to local circumstances to develop artificial cultivation or propagation of resources; we must carry out construction for the technical rebuilding and systematization of these water bodies in accordance with the law, and we must conscientiously solve the conflicts in the management system of large water surfaces that span border areas which have been undecided for a long time, and the conflicts between agriculture and fishery and between the regulation and storage of water and cultivation.

9296
CSO: 4007/576

BRIEFS

TOBACCO INDUSTRY GROWTH--This year, a welcoming trend in our province's tobacco production has emerged: the area has expanded, the yield has increased and the quality has improved. According to preliminary statistics, the planting area of flue-cured tobacco, and well-known sun-dried tobacco throughout the province has reached over 500,000 mu, an increase of 84 percent over last year. At present, the broad number of tobacco farmers are enthusiastically submitting and selling new tobacco leaves to the state. Up to the end of July, the province's major tobacco producing counties as a whole have procured over 109,000 dan, an increase of nearly onefold over the same period last year; batches of new tobacco leaves have already begun to be transported to the cigarette factories within the province. Tobacco is one of the major economic crops of our province. Because of the further implementation of the various economic policies of the party in the farm villages and the popular implementation and continuous perfection of the various forms of responsibility system in tobacco production, this year our province's tobacco production realized greater development. The tobacco, bast fiber and tea (indigenous products) companies at each level in the province used many forms to train tobacco technicians for the communes and brigades, organized in time the supply of chemical fertilizers and timber which are materials needed in tobacco production, and also served importantly to increase the yield and to improve the quality of tobacco. [Text] [Wuhan HUBEI RIBAO in Chinese 17 Aug 81 p 1] 9296

CSO: 4007/574

SPRING, SUMMER BUMPER TEA HARVESTS REPORTED

Nanjing XINHUA RIBAO in Chinese 16 Aug 81 p 1

[Article by Su Cha [5685 5420]: "Our Province's Spring and Summer Tea Yields Bumper Harvests; Completion of Sales Plans Is Better Than Past Years, Quality Is Higher Than Past Years"]

[Text] Following increased yields of spring tea in our province, each locality overcame drought, diseases and insect pests and similar natural disasters to achieve a bumper harvest of summer tea. Up to the end of July, the whole province had already produced 87,500 dan of spring and summer tea, an increase of 11.5 percent over the same period last year. The planned task for the whole year has been completed 79.6 percent. This is the best spring and summer tea production in the past 3 years. The enthusiasm of the tea-producing units in submitting and selling tea was high. Completion of the selling plans was better than in past years.

During the production of this year's spring and summer tea, the supply of coal and oil and such materials was short. The tasks of picking and initial processing were heavy, refining and processing could not be carried out in time. But each locality thought of many ways to concentrate on refining and processing, and actively sold tea to the state. The seven key tea-producing counties, Yixing, Liyang, Jintan, Jurong, Lishui, Gaochun, Dantu, in Zhengjiang Prefecture sold 42.3 percent more tea for the domestic market than in the same period last year. The collective tea farm of the communes and brigades of Liyang County has completed 87.5 percent of the annual procurement plans set by the county planning committee for both seasons. The Lishui County tea farm produces mainly export tea. As of 25 July, it has already sold to the higher authorities 285.8 dan of green tea, an increase of 10.3 percent over the annual amount last year. Also, the quality of the tea sold by these farms is higher than previous years, and the proportion of tea within the grades has risen.

This year, the ratios of the major tea-producing regions and most of the units that sell tea on their own have been held within the range of the ratio for procurement and for private use established by the province. Many production units have also expanded the amount of sale to the state and have controlled the amount they sold themselves.

The main problem at present is that this year the tea procurement plans set by the provincial planning committee were not assigned to the production units in many

localities, and most localities did not sign contracts for submission and sales to the higher authorities. Therefore, it is requested that the concerned departments rapidly assign the procurement plans set by the provincial planning committee to the production units, sign procurement and marketing contracts which stipulate the responsibilities of both parties, and arrange well the material supply of coal for use in the production of tea, so that this year's tea production plan and the task of submitting and selling tea to the higher authorities can be completed and over-fulfilled.

9296
CSO: 4007/574

BRIEFS

MARTEN PRODUCTION--This year, our province's marten raising industry has developed rapidly. Up to the end of July, the whole province already has 210,000 martens, an increase of over onefold over last year. In 1979 there were 121 state and collective marten farms throughout the province. Last year they increased to 185, and this year they have increased dramatically again to 543 farms; the number of breed martens raised has increased 1.4 times over last year. After the Third Plenum, our privince developed state and collective farms to raise martens and at the same time actively encouraged and supported commune member families raising them. In 1979 the whole province had 11 commune member families raising martens, totaling 19 breed martens. This year, the number increased drastically, to 7,114 families raising 22,000 breed martens. Outstanding families and teams that have become rich by raising martens have emerged everywhere. The supply of breed martens cannot meet the demands. Throughout the province, there are regions of colonies of over 100,000 martens and counties with over 50,000 martens, and a large group of workers and families specializing in raising martens has emerged. [Text] [Nanjing XINHUA RIBAO in Chinese 12 Aug 81 p 1] 9296

CSO: 4007/574

PROVINCIAL GOVERNMENT RETURNS LAND TO PRODUCTION UNITS

Jinan DAZHONG RIBAO in Chinese 16 Aug 81 p 1

[Article: "The Provincial People's Government Conscientiously Clears Construction Land and Has Returned 160,000 Mu to the Production Teams for Planting"]

[Text] Jinan, 12 August--NCNA reporter Mao Zhicun [3029 5268 1317] reports: The Shandong Province People's Government has carried out an overall clearing of land taken over by the state and the collective for construction since 1966, and has taken action in the handling of over 560,000 mu of illegally occupied land. Of this, 160,000 mu were returned to the production teams for planting and over 8,000 mu were zoned to other units urgently needing land. Requisition procedures were carried out for another 400,000 mu that were truly needed for requisition, and over 42.4 million yuan were given to the production teams as compensation.

Because of the development of construction and the continued occupation of cultivated land and population increases, the per capita average of cultivated land in Shandong Province has dropped from 2 mu 9 fen at the right after the founding of the nation to 1 mu 4.9 fen. The conflict of more people and less land has become more and more sharply defined. To conserve land and stop the phenomenon of unorderly requisition and occupation of cultivated land for capital construction, the Shandong Province People's Government decided in the spring of 1979 to carry out an overall clearing of land that had been occupied and used by the state and collective for construction since 1966. The province, prefectures, counties and communes immediately established land requisition leading groups and organized over 5,000 cadres to register, double check and measure the land of the more than 54,000 land-using units. After 2 years of organization, it was discovered that most of the units using land for construction throughout the province had implemented the state's land requisition policy well and had paid attention to the conservation of land used. But some units had violated state policy: some used land without requisition, some requisitioned more and used less, or requisitioned land without using it, and some units even encircled and occupied cultivated land of production teams at will.

In dealing with these problems that exist in the use of land for capital construction, each locality in Shandong Province helped each land-using unit to recognize the significance of conserving the use of land, mainly through positive education to establish an overall viewpoint. For example, Tanfang Prefecture compiled the following statistics when clearing land used for construction: During the 21 years from 1956 to 1977, the entire prefecture lost over 3.7 million mu of land. Most of the land lost consisted of plains and bumper harvest fields near towns. Calculating the average per mu yield of food grains throughout the entire prefecture in 1977 at 600 jin, each year over 2.2 billion jin of food grains less were harvested,

equivalent to the food grain rations of the present population of Tanfang city for 17 years. The 47,100 mu of land requisitioned for a long period without being used throughout the entire prefecture decreased production by over 28 million jin of food grains a year. After such an accounting, many cadres saw the seriousness of the problem and said: "One has to calculate before one knows, the calculations are frightening; in the future, we cannot simply care about ourselves and not care about the whole situation." Many units conscientiously returned the extra land to the production teams for planting.

During the process of clearing the land at each locality, many units that "regard land as being precious as gold" were also discovered. For example, some units in Jining Prefecture filled in bays and rechanneled rivers, leveled one-story houses to build multistory houses, strictly controlled building density, and rationally planned the distribution of housing to conserve over 8,500 mu of land for the state. When the Laiwu Power Plant was being built, the original plan occupied over 3,000 mu; later, after repeated surveys and designs, it was built on only a little over 1,200 mu of waste mountain and infertile land. These good models were summarized in time at each locality and praised widely.

The Shandong Province People's Government clearly established the principles by which to handle illegally occupied land which has been cleared: All units that use land without requisition must inspect the land and complete procedures for reporting and requesting approval according to their authority. Extra land must be freed. Without approval, all construction must cease and construction projects that have been completed cannot be used. Units that requisitioned more but used less land or units that requisitioned land without using it must return all of the extra land and the unused land to the production teams for planting, or zone the extra and unused land to other units that urgently need land. All land that has been privately transferred or sold and purchased must be returned to the production teams for planting. When absolutely necessary, land requisition procedures must be completed. Units that violate the spirit of these regulations and refuse to change after being educated must be disciplined. In accordance with the spirit of the regulations of the provincial people's government, each locality has separately handled the problems that have emerged from clearing the land.

The work of clearing land used for construction in Shandong Province is still being carried out. To stop the phenomenon of wasting land, the provincial people's government recently established clear regulations regarding the problems of making sound the land management agencies, the authority for review and approval of land requisition, and land for building houses in farm villages. The regulations require each locality's management department to conduct onsite surveys and actual accounting of all applications for land use and to insist on the system of collective review and approval. All applications not meeting the policy and regulations will be disapproved. Building units must possess all capital construction plans, capital and materials before requisitioning land, and they should select the site carefully and design rationally to conserve the use of land.

9296
CSO: 4007/574

EXPERIMENTS WITH LATE GENG RICE VARIETIES REPORTED

Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 5 Aug 81 pp 9-10

[Article by Lu Zhenqing [7120 2182 3237], Crop Institute, Shanghai Municipal Academy of Agricultural Sciences: "Initial Report on Hot House Seedling Propagation Screening Trials for Late Rice Varieties"*]

[Text] The longstanding low and inconsistent yields from late rice in suburban areas have greatly impaired total grain output. We used late ripening early geng or early ripening intermediate geng varieties which were fairly strong [chun 4783] in their reactions to light and heat, and used hot house thin [bao 5631] soil propagation methods to make an initial screening of early geng 050, Lianjian 58, and 74-279, three varieties with a short growth period, resistance to rice blast, and fairly high yields. In addition, trials will continue with Liming, Liangfengzao, and 7601, which have fairly good bumper output characteristics and strong resistance to cold in the late stage.

Materials and Methods

Eighteen varieties were provided for testing, some early geng and some intermediate geng. The plot area for the early geng was 0.02 mu, reused three times.

The intermediate geng was sown on 5 July and transplanted on 1 August. The early geng was sown on 19 July and transplanted on 1 August. Perforated plastic seedling flats containing thin soil and measuring 60 x 24 cm were used for propagation. Quantity of seeds sown: 80 grams of dry seed per seedling flat was used for the intermediate geng. This converts to approximately 900 jin per mu of seeds. For the early geng, 110 grams of dry seeds were sown per seedling flat. This converts to 1,100 jin per mu of seeds. Within 5 or 6 days after sowing, both were raised in seedling fields. On 10 July, an application of 10 jin per mu of urea was given the intermediate geng seedling field, and on 23 July, 15 jin per

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*These experiments were conducted under the guidance of Comrade Ding Changling [0002 2490 7881]; the Municipal Bureau of Agriculture's Promotion Station provided some of the seeds; and Comrade Hu Di'an [5170 6611 1344] participated in some of the work, for which appreciation is expressed.

mu of ammonium sulfate was applied to the early geng seedling field. Distance between plants in the growing fields was 4 cun; distance between rows was 4 cun, and 38,000 holes per mu were planted. Field care was that usually provided growing fields. Harvesting and threshing was done at one time, and yields were converted in terms of standard moisture content (15.5 percent).

Results of Experiments

(1) Growing Period. Of all the varieties tested, early geng 76-2 had the shortest growing period, totaling 102 days. The growing period for intermediate geng, Chuangui No 4, was longest, totaling more than 125 days (by which time it had not yet ripened). For most early geng varieties, the growing period was from 106 to 110 days, and for intermediate gengs, it was from 118 to 125 days.

Those early geng varieties with a growing totaling less than 110 days ripened normally. Such varieties included 050, 583-6, Lianjian 58, and 76-2. Those with a growing period of more than 110 days were either unable to ripen normally or the empty glume rate was greatly elevated. Such varieties included Liming, 74-279, and Lianjian 55. Intermediate geng varieties with a growth period of less than 120 days were able to ripen normally. These included CC 76 and C-59-2. Those varieties with a growth period exceeding 120 days could not ripen. These included Nangeng 33, and Sugeng No 7. The date for safe full heading in the test year was 18 September. Those that headed before this time produced high yields, the early geng generally yielding about 600 jin. For intermediate geng, yields were generally above 400 jin. Those that reached full heading after this date had yields of only 200 to 300 jin per mu. (see table)

Counting effective accumulated temperature for the entire growth period for each variety (10°C average accumulated temperature): From those varieties from which yields were harvested, it may be seen that effective accumulated temperature for early geng varieties was around 1,300°C. For 050 and Lianjian 58, it was 1,296.2°C, and for 74-279 it was 1,317.1°C. For intermediate geng varieties, effective accumulated temperature was around 1,500°C. For Liangfengzao, it was 1,538.1°C, and for CC 76, it was 1,511.6°C. Data shows that effective accumulated temperature during the entire growing period of late geng, Damiao Shuangfeng No 1 is about 1,700°C. One may note that there is a difference of about 200°C in the effective accumulated temperature for various varieties. Inasmuch as early geng requirements for effective accumulated temperature are low, when the weather is abnormal and there is cold damage, the impact on geng is relatively slight.

(2) Leaf Growth. Each variety averaged a daily growth of about 0.06 to 0.31 leaves. Among early geng varieties, speed of growth was greatest for 050, 74-279, 583-6, and Lianjian 58. It was slowest for "205." Among intermediate geng varieties, the growth rate for Liangfengzao was most rapid; it was slowest for Sugeng No 7. Furthermore, among early gengs, the leaf growth pattern for "050" and Lianjian 58 were different. In the case of "050," leaf growth was very rapid in the early stage. Prior to 19 August, average daily leaf production was 0.22, whereas after 28 August, average daily leaf production was 0.16. In the case of Lianjian 58, however, leaf growth was fairly rapid in the later stage. Prior to 19 August,

	Variety	Heading Date (Mo/Day)	Full Heading Date (Mo/Day)	Ripening Date (Mo/Day)	Total Growing Period (Days)	Yields (Jin/mu)
Intermediate gengs	CC 76	9/18	9/22	10/31	118	389.5
	C-59-2	9/18	9/22	11/3	121	480.0
	Liangfengcao	9/22	9/26	11/7	125	203.0
	Sugeng No 7	9/22	9/26	11/7	125	234.5
	Nangeng 33	9/22	9/26	11/7	125	222.0
	Xhuangui No 4	9/26	9/30	/	125	/
Early gengs	Liming	9/30	10/4	11/15	118	335.0
	7601	9/30	10/4	11/3	106	/
	74/279	9/26	9/30	11/7	110	404.5
	050	9/18	9/22	11/3	106	671.0
	205	9/26	9/30	11/7	110	129.0
	583.6	9/18	9/22	11/3	106	496.0
	Lianjian 58	9/18	9/22	11/3	106	589.5
	Lianjian 55	9/30	10/4	/	118 & up	/
	Jiuqiu 113	10/4	/	/	"	/
	604	9/26	9/30	/	"	/
	76-2	9/18	9/22	10/31	102	285.5
	Qiuchuan No 10	9/30	10/4	11/7	110	120.0

average daily leaf production was 0.17 of a leaf. After 28 August, average daily leaf production was 0.31 of a leaf. Leaf production for 74-279 was fairly regular. During both the early and late stage, average daily leaf production was between 0.18 to 0.24 of a leaf. Total leaf age of all varieties tested was between 11 and 13 leaves. For intermediate gengs, it was 12 to 13; and for early gengs, it was 11 to 12. The period from the beginning of transplanting on 2 August until 3 September was the major one for leaf growth in late crop rice. During this stage, intermediate gengs produced 3.5 to 5.5 leaves, and early gengs produced 6-7 leaves. Apart from the short seedling age and young leaf age of early gengs at the time of transplanting, the major reason was that leaf production by early geng varieties was generally quite rapid. Consequently, leaf production during the stage of field growth was also quite great. This state of affairs was advantageous in the make-up of early geng yields.

(3) Yield Structure. Small plot yields showed that for normally ripening varieties yields were more than 550 jin per mu, a fairly ideal situation and higher than for Damiao in general (with yields of about 400 jin per mu). Given the special weather conditions of 1980, among those varieties that ripened normally, the early geng varieties had higher yields than the intermediate geng varieties. The principal reason for this was the cool summer when accumulated temperatures during the late rice crop growing period were insufficient. They were 91.5°C lower than in most years, causing impairment to differentiation of panicles and to heading and coming into milk. Some varieties were even unable to put forth the panicle necks. As a result, among intermediate gengs with their rather late ripening date, the empty glume rate was extraordinarly high, and a small number of intermediate geng varieties, such as Sugeng No 7, virtually did not come into milk. Conversely, the early gengs, which ripen relatively early, were fairly lightly affected. Varieties 050 and Lianjian 58, which fully headed before 18 September, were unaffected by the low temperatures.

However, in terms of panicle seed structure, the total number of grains per panicle in intermediate geng varieties was more than 100. From this it may be seen that the potential intermediate geng varieties offer is still very great, the crux being in earlier ripening varieties. Though the empty glume rate was fairly high for delayed ripening early geng variety 74-279, amounting to 49.7 percent, its per thousand weight of grains was highest, amounting to 29.10 grams. Each panicle carried 89.71 grains. Its potential for increased yields is very great, and with appropriate readjustment of sowing dates in future, and extension of seedling age, a reduction in its empty glume rate will be in view. Additionally, Liangfengzao, Liming, and 7601, all have their own characteristics. Of all the varieties tested, Liangfengzao had the largest panicles, reaching 19.45 centimeters in length. The intermediate geng variety that was planted had too great a seedling age; its empty glume rate was high; and its per thousand weight of grains low. Its sowing time must be readjusted and further observations made. Liming variety showed good tolerance of cold in its late stage, and its entire booting process took place in temperatures averaging lower than 20°C, despite which it was able to come into milk and fruit. By advancing the time of sowing appropriately, it will be a variety that is cold resistant and process consistent yields. Variety "7601" has dark leaves, and the plant shape is extremely upright and compact. It stands first in growth during the early period. As a result of having been sown too late, it was unable to come into milk during the late stage. Next year it will be sown earlier and observations will continue to be made.

Brief Conclusion

1. Temperature changes in the Shanghai area have always been fairly great, and varieties that are temperature sensitive produce inconsistent yields as a result. Light sensitive varieties, however, require a certain leaf age in order to be able to react to the light period; thus, full heading in safety cannot be assured. Therefore, hothouse seedling propagation of late crop rice should select varieties whose reactions to light and temperature are highly [chun 4783] sensitive.

2. As a result of varieties screening and initial evaluation of 050, Lianjian 58, 74-279, and such varieties with fairly high yields, and Liming, Liangfengzao, and 7601, each of which has its own characteristics, continued experiments should be conducted.

3. Those intermediate gengs with a growing period of less than 120 days were able to ripen normally under the weather conditions of 1980, and normal ripening of early gengs with a growing period of less than 110 days took place. The date by which full heading may be safely completed was set at 18 September, and varieties that fully headed after this time faced difficulties in ripening.

4. The weather during 1980 was exceptional, so yields from hothouse propagation of seedlings were comparatively ideal, and the amount of seedling fields was less. Consequently, adaptation of general methods to specific situations in using hothouse seedling propagation, has fairly great significance for increasing total yields.

9432
4007/4

IMPROVEMENTS IN QUANTITY, QUALITY OF XINJIANG INDUSTRIAL GOODS DISCUSSED

Beijing ZHONGGUO NONGKEN [STATE FARMS AND LAND RECLAMATION IN CHINA] in Chinese No 8, 24 Aug 81

[Article by Fu Biduo [0102 1801 6995]: "Readjust Structure; Produce More Famous Brands; Open More Markets"]

[Text] Industrial production in the Xinjiang Reclamation Area is steadily developing in the midst of readjustment. As of 1980, total industrial output value increased from 505 million yuan in 1977 to 711 million yuan, a 40.8 percent increase. Industrial profits rose 12 percent over 1979. Output of more than 30 major products including raw coal, cement, cotton cloth, cotton yarn, and machine-processed sugar steadily increased, and quality gradually rose. A large number of quality products came into being. Fifteen different industrial products were designated national or autonomous region high quality products.

The main reason that industry in the Xinjiang agriculture and land reclamation area has been able to develop in the midst of readjustment is attention to the following tasks:

Attention to Structural Readjustments, and Vigorous Development of the Light Textile Industry

In recent years, attention has been given to developing the processing industry for raw materials provided by agriculture, and hastening development of light industry. Last year, fiber processing in the reclamation area increased 1.4 fold; sugar processing increased 60 percent; food processing increased 31 percent; and the output value of light industry increased 25.4 percent. In the output value of light industry, output value derived from agricultural products used as raw materials was 96 percent. Enterprises in each agriculture and land reclamation bureau that had no sources of raw materials, no markets for their goods, produced low quality products at a high price, and had sustained losses for a long period of time carried out a readjustment. Last year the reclamation area closed, stopped, combined, or converted a total of 15 enterprises. The closing and stoppage of just two small blast furnaces cut losses by 2.1 million yuan. Each bureau also carried out a search for unused potential, reformed and transformed existing enterprises. The Shihezi integrated agricultural, industrial, and commercial enterprises carried out a transformation of the Bayi Sugar Plant, increasing its daily sugarbeet processing capacity from 1,000 tons to 1,500 tons for profits that broke the more than 10 million yuan mark. The reclamation area increased investment allocations for several cement

plants and carried out a program of seeking out unused potential and reform, increasing cement output by more than 30,000 tons. In the course of readjustment, some agriculture and land reclamation bureaus made proper arrangements for the handling of the relationship between agricultural and industrial earnings distributions, returning a portion of industrial plant profits to farms. While readjusting high procurement prices paid for sugarbeets, the Shihezi Bayi Sugar Plant returned 30 percent of profits to production units that had provided the raw materials. As a result, raw material supply has been ample, a situation that never existed in the past.

While readjusting the internal structure of industry, each jurisdiction gave earnest attention to economic coordination and the promotion of the development of industrial production to increase economic effectiveness. Adhering to the principles of voluntary participation and mutual benefit, after the Shihezi Integrated Agricultural, Industrial, and Commercial Enterprise coordinated the operations of outlying oil pressing plants and eight nearby regimental farms, procurement of raw materials increased fivefold over what it had been prior to the coordination of operations, and the oil output rate rose 4 percent. The plants returned 80 percent of profits to the farms, so farm enthusiasm ran very high, and the longer the plants operated, the better they became. The Guidun Fats and Oils Chemical Plant entered into joint operations with six farms in Chepaizi, increasing output of edible vegetable oil by 200 tons and lowering costs by 700 yuan per ton.

Attention to Product Quality and Production of Famous Brands

In recent years, agriculture and land reclamation industrial enterprises have carried out production strictly in accordance with quality standards for industrial products, setting up and perfecting quality inspection teams and various inspection procedures. They have used various methods for studying and adopting for use advanced techniques, and have launched high quality product competition campaigns, so that product quality has steadily increased. Designated national or autonomous high quality products in 1979 were XA 2201 gabardine, 3030 fine cloth, medicinal alcohol, Xin'an liquor, Dahong blankets, Tianchi special liquor, Yili special liquor, Pinetree brand licorice extract, and Parasol Tree brand laundry powder. In addition to maintaining the high quality of these products in 1980, some new famous brand products were produced. Some of these were Snowy Peak brand 27.8 size fine cotton-wadded quilts produced by the Shihezi Bayi Cotton Textile Plant, which were designated a national high quality product; XA 2236 pure wool knitgoods and XA 2103 wool serge quilts, which were designated autonomous region high quality products. The 142 regiment's Xin'an liquor and the Shihezi Independent Regiment's special liquor were evaluated as being one of the ten finest liquors in a comparison of 600 different products in the national agriculture and land reclamation system. Longxu crunchy candy, made by the Nongjian Food Plant in Changji, was well evaluated at the Guangzhou Trade Fair. Still other products received high marks in comparison and appraisal of similar products conducted in the northwest and in the autonomous region.

Attention to Market Regulation, and Open New Markets for Products

In recent years, the reclamation area's industrial enterprises have changed their business practice of "waiting for customers to come to their doors." They have changed from "waiting for jobs," and "waiting for markets," to "looking for jobs,"

and "looking for markets," and have gone out to get an understanding of market conditions and broaden production avenues to enliven the economy. Leadership comrades and employees of the Changji agriculture and reclamation bureau's tractor plant have frequently visited customers in 350 units and 42 counties of northern and southern Xinjiang and in China Proper to promote the sale of their products. Throughout Xinjiang, they have set up six sales sites and an exhibition site. Last year the plant's output value fulfilled annual plan by 124 percent. Acting in response to market demand, the 102 Regiment's Wutong Chemical Plant promptly increased production of its new White Rabbit Brand trademark, opening a market for its laundry powder in Hong Kong, and marketing it abroad in Indonesia and Singapore. The quantity sold abroad increased sevenfold.

9432
CSO: 4007/14

DEPUTY GOVERNOR ON IMPORTANCE OF AGRICULTURAL SCIENCE

Kunming YUNNAN RIBAO in Chinese 19 Aug 81 pp 1-2

[Article by Ma Wendong [7456 2429 2639], deputy governor of Yunnan Province and concurrently director of the provincial Science Committee: "Report on Yunnan Province's Scientific and Technological Work and Opinions About the Future" (as reviewed and approved by the Ninth Session of the Standing Committee of the provincial Fifth People's Congress)]

[Excerpts] In agriculture, research and the popularization and application of scientific and technical achievements of superior varieties, cultivation techniques for high yields, reformation of the planting system, improvement of red loam soil, and prevention and control of cold damage, disease and insect pests have produced notable increases in yields. For example, six prefectures, including Wenshan, Lingchang, Dehong, have introduced and popularized the xian type hybrid paddy rice in 330,000 mu, and the general increase in per-mu yield has been over 200 jin. Units of the Yunnan Agricultural University and the provincial Agricultural Science Academy have spent many years experimenting on and studying the geng type hybrid paddy rice "dian xing san xi"; four of its combinations manifested visible heterosis, and welcome achievements were realized. Beginning in 1977, "feng mai 13" bred and cultivated by the Agricultural Science Institute of Dali Prefecture was popularized over large areas in Dali, Lijiang and Chuxiong, and it was used in combination with cultivation techniques to produce high yields, thus changing the long period of low yields of the major wheat-producing region. The facts show that the potential for scientific planting is great. Baoshan County is a relatively outstanding model. The county relied upon policy and science in agricultural production. In the 4 years 1977-1980, a total increase of 155.02 million jin of food grains was produced, surpassing the total of the increased yields of food grains of the past 24 years. The average annual increase in yield was 38.75 million jin.

Science and technology have also promoted the development of diversification in our province. At the beginning of liberation, our province had only 91 rubber trees. After long efforts by scientific and technical units such as the Yunnan Tropical Crops Institute and efforts by farming and reclamation workers, rubber trees are now planted in more than 700,000 mu, making this our nation's second natural rubber base. The superior sugar cane variety "71/388" bred and cultivated by the Sugar Cane Institute of the provincial Agricultural Science Academy possesses the superior qualities of high yield, early maturity, high sugar content and broad adaptability. It is a very promising superior variety. The

Flue-Cured Tobacco Institute of Yunnan Province and the scientific and technical personnel in Yuxi and Chuxiong introduced and successfully tested the new variety of flue-cured tobacco "si pei te G-28"; the per mu yield was generally 300 to 400 jin. The quality of the tobacco leaves visibly surpassed the original superior variety hong hua da jin yuan. The Kunming Plant Institute extracted exuvial hormone from wild plants and used it in raising silkworms, which can increase the yield of silk by 10 percent to 30 percent. The achievement won second prize for national inventions. The provincial Livestock Veterinary Institute developed a new method of cultivating frozen mushrooms by natural fermentation. This year, the Kunming region cultivated over 3,700 square meters and has provided over 30,000 jin of frozen mushrooms. Experiments in artificial cultivation of precious medicinal herbs of amomun, villosum, gastrodia elata, and angelica sinensis have also achieved good results.

I. Greatly Strengthening the Work of Agricultural Science and Technology

1. Viewing the situation of the whole province, we see that the main problems affecting our province's agricultural production are changes in the ecological environment, red loam soil and low-temperature cold damage. Our urgent task at present is to quickly stop the destruction of the forest, encourage afforestation, protect and rationally develop and utilize natural resources, revive and retain the ecological balance, and develop scientific research. Of the presently available cultivated land in our province, over 19 million mu are red and yellow soil, constituting almost half of the total area of cultivated land. In the future, we must improve the whole province's red and yellow soil in stages and in groups on the basis of summarizing the model experience. Reverse spring cold and low August temperatures seriously affect the achievement of high and stable yields in our province's paddy rice and broad beans. In the future, research must be strengthened to propose techniques and measures to comprehensively defend against cold damage.

2. At present, we must popularize and apply the achievements of agricultural science and techniques already possessed extensively. Emphasis should be placed on concentrating on superior varieties, rational application of fertilizers, techniques of cultivation and reform of the planting systems and similar measures. These are measures to increase yield that require less expenditure, that can produce quick results, that can produce large gains and that have broad adaptability.

3. The guideline of "never relaxing food grain production while actively developing diversification" must be persistently implemented. A commercial economy must be developed and a rational production structure must be maintained. Scientific and technical work in flue-cured tobacco, sugar cane, tea, rubber and southern medicinal herbs must be strengthened to fully develop their superiority. The two "precious lands"--the tropics and subtropics and the high, cold mountain region--must be better protected, developed and utilized. Building grass mountains and studying the introduction and cultivation of superior quality grazing grasses must be developed. Superior breeds of livestock must be introduced, and at the same time, preservation and purification and regional superior varieties must be strengthened. The study of fishery and cultivation techniques must be strengthened. In general, we should select the items having the brightest future for development in each locality in accordance with market needs and the status of

the resources at each locality to conscientiously solve the problems in production and technology and to produce commercial products with local flavor.

4. Doing a good job of surveying agricultural resources and agricultural zoning is very important basic work in guiding and developing agricultural production. Our province's natural resources of topography, climate and soil are very complex. In recent years, the provincial agricultural committee, the provincial science committee and the provincial planning committee have organized concerned units to write "Yunnan agricultural geography" and the "Yunnan Province's comprehensive agricultural zoning (draft)" on the original foundation. They have provided an important basis for the development and utilization of the entire province's agricultural natural resources and for doing a good job of county level agricultural zoning. Each county must do a good job of agricultural zoning, and during this year and next year we must first complete a rough county-level agricultural zoning.

5. As the various forms of responsibility system of accounting wages in joint production are implemented, the enthusiasm of the broad number of farm village cadres, farmers and masses to grasp scientific technology is extremely high. A glorious movement to popularize science is surging in the farm villages. In our history, we have never had such enthusiasm among the peasants in welcoming science, scientists, and intellectuals. The work of agricultural science and technology must rapidly adapt to this new trend and demand. At present, we must emphasize and concentrate on the following three aspects:

First, while establishing and perfecting the production responsibility system, we must actively test and popularize the joint production responsibility system in technology and other effective methods. The technical joint production responsibility system is a good way to combine policy with science organically and utilize economic patterns to popularize agricultural science and technology. It is an important way to change scientific research results rapidly into a direct productive force. We must emphasize these new methods, conscientiously summarize experience and continue to strengthen development.

Second, we must exert efforts to popularize knowledge of science and technology, satisfy the new demands by the farmers to learn and to use science. The press, broadcasting and television must all strengthen propaganda and reporting, and publishing departments must actively compile and publish books on agricultural science and technology. The county and the commune must provide technical services to the broad number of farmers. The province, the prefectures and the counties must organize mobile agricultural science and technology groups in time to go deeply into the farm villages, communes and brigades to lecture on agricultural science and technology, train agricultural science and technology personnel, and help solve scientific and technical problems in production.

Third, we must actively strengthen the buildup of agricultural science teams and the agricultural science network, and fully develop their function. The presently available agricultural science and technical personnel are the backbone forces to popularize agricultural science and technology. We must emphasize their training and improvement to create better working conditions for them. The county and commune agricultural science groups should strengthen contacts with "scientific and technical families" to help them to better develop their function.

9296
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STATE FARM MANAGEMENT SYSTEM REFORM ACHIEVES GOOD RESULTS

Kunming YUNNAN RIBAO in Chinese 14 Aug 81 pp 1-2

[Article: "Major Reform of the State Farm Management System--Farms of Yunnan Reclamation Region Implement Contracts for Financial Work With Good Results"]

[Text] Editor: In March and April of this year, responsible comrades of the Ministry of Finance came to the Xishuangbanna Reclamation Region, which is part of our province's agricultural reclamation system, at the head of an inspection team to see how our state farms were implementing the contracts for financial work and the production responsibility system. Their inspection report follows:

We went to Xishuangbanna in the Yunnan Reclamation Region to inspect and gain an understanding of the experience of state farms in contracting financial work. We saw the Jinghong and Ganlanba farms, inspected rubber tree forests, heard reports on the situation of the farms and of the farming and reclamation departments of the province and the prefectures, and held discussion meetings with representatives of the production team workers. We believe that implementation of the method of contracting financial work on the farms has changed the relationship among the state, the farm and the worker. Financial management has become creative, and it is a major reform of the management system of state farms. As financial work was contracted, the system of "quotas, contracts, rewards" was established; the productive enthusiasm of the internal departments of enterprises, workers and individuals was mobilized; production developed quickly, the costs dropped each year, profits rose each year, the life of the workers was improved, management of state farms was enlivened, and a new road was created in the management of state farms.

Contracting Financial Work Stimulated the Overall Improvement of Business Management of Enterprises

After the state farms in Yunnan Province implemented the method of contracting financial work, the economic results were visible. They conducted a local test of contracting financial work in 1979 and popularized it on an overall basis in 1980. In 1979, the province's financial administration returned subsidies for losses totaling 18.7 million yuan. In 1980, a net profit of 41.1 million yuan was realized; of this, 4 million yuan were submitted to the province's financial administration, 2.71 million yuan were submitted to the prefectures and counties to aid civilian ventures in rubber production, and the enterprises kept 34.39 million yuan.

The Yunnan Reclamation Region's method of contracting financial work is as follows: The rubber plantations and their directly subordinate industries, transportation and commercial units which have relatively more profits submit their profits according to contract; farms with small profits do not submit profits and are not subsidized; farms with poor conditions and which find it difficult to turn losses around are temporarily given fixed subsidies. Farms also determine whether their branch farms should submit profits or should be subsidized in accordance with the actual situation. The farms establish "fixed quotas, contracts and rewards" for the production team and auxiliary production units, i.e., they establish fixed tasks, fixed quality, fixed costs, fixed profits, fixed reward and punishment. In this way, contracting financial work combines financial management with the whole business management of the enterprise, thus strengthening financial work and also stimulating production management and other aspects of business management. Before contracting financial work, many enterprises suffered losses year after year; actually, the losses were absorbed by the state, the enterprises did not bear the economic responsibility. Whether the work was done well or poorly was all the same, and the enthusiasm of the farms and the workers was damaged. When the contracting of financial work began, many people did not understand. Looking at it now, the method of contracting financial work by the farms was successful. It mobilized the enthusiasm of the internal departments of enterprises at each level; solved the relationship among the state, the collective and the individual; and solved the problems of "eating from the big pot."

Contracting financial work gradually developed from comprehensive contracts for submitting profits or for subsidizing losses of one farming and reclamation enterprise to contracts for each production item and for the internal departments of the farming and reclamation enterprises at each level. Within the enterprise, contracts for each production item and for the business units at each level were established so that everyone shoulders economic responsibility. If the task is completed and if profits have been increased, each level will enjoy the fruits of labor; if the task is not completed and if losses beyond the allowable amount have been incurred, the unit creating the loss will bear the responsibility.

Among the items and levels of contracts, some farms distributed the portion of production kept for themselves only to the branch farms but not to the production teams. To develop the enthusiasm of the production teams, it seems that some benefits should be given to the production teams. Some farms still have not included the production team as a first-level accounting unit. It appears that economic accounting should also be carried out for several major business items of the production teams so that the production team will also shoulder some economic responsibility and have some autonomy.

Accounting Wages in Joint Production Has Fully Mobilized the Labor Enthusiasm of The Workers

To solve the economic relationship between the enterprises and the workers, the production post responsibility system of the individual workers must also be handled well so that the economic benefits of the individual workers and of the enterprises can be linked together. The method of "fixed quotas, contracts, rewards" practiced by the rubber farms is a very good method. They established the "number of trees" within a 10 mu area of rubber trees which each laborer can cut in one day, thus establishing a quota for the laborer, and they implemented a fixed number of trees,

fixed yield, fixed quality (including technology and maintenance), fixed reward and punishment, accounting wages in joint production, and rewards for joint production. This is also a form of production management. In this way, the workers regard the established "number of trees" as their own and take more care of them; they pay attention to the diseases of the trees, dig ditches and apply fertilizers, prevent damage by roving cattle, learn to improve techniques, do not damage the bark or cause the bark to die when tapping the rubber trees, and exert efforts to increase the yield of rubber. After this method was implemented, last year the Xishuangbanna Branch Bureau's rubber farms produced a 15-percent increase in the total yield of dried rubber over the previous year. The number of trees with high yields increased by 54 percent. The number of high-yielding individuals increased 29 percent. It appears that the results of implementing the production post responsibility system and accounting wages in joint production are good.

We have realized from the implementation of the method of "fixed quotas, contracts, rewards" in rubber production that different forms of this method can be implemented in accounting wages in joint production and in contracted production of food grain crops and other economic crops of the farms in the spirit of the economic responsibility system of "the number of trees" for producing rubber. Some localities have implemented accounting wages in joint production in hog raising and thee method of calculating wages according to yield, and they have thus turned losses around, increased profits and achieved good results.

Readjustment and Relaxing Economic Policies for Families Cannot Be Neglected

Readjustment and relaxing economic policies for families can mobilize the enthusiasm of the workers to engage in family sideline production, increase production, increase the income of workers, and improve the life of workers. Allowing workers to engage in some family production at the state farms is also a supplement to production of the socialist farms and is very beneficial.

The various farms of the Xishuangbanna Reclamation Region have already demonstrated results from the policy of relaxing family sideline production by the workers. Comrades of Ganlanba farm believe that developing the family production enthusiasm of workers and developing the production enthusiasm of socialist enterprises are complementary. When the production of socialist enterprises has been developed, the income of workers will increase and the productive enthusiasm will be heightened. In the same way, if the family sidelines of workers that depend upon big socialist production are developed, this will also increase the income of workers and improve their lives. Fully developing these two enthusiasms will not only stabilize the worker's life, but it can also stimulate the workers to engage more actively in production at the socialist enterprises. A few years ago, limitations on the family production of the workers reduced the sources of income of the workers, their lives became more difficult, and so the workers' enthusiasm toward the production of socialist enterprises was affected. Viewing the situation before and after relaxing the hog raising policy for families of workers, we see that this function is obvious. In the past, farms did not allow the families of workers to raise hogs, all meat and vegetables were taken care of by the farms; meat and vegetables for meals were scarce, and losses of the farm were great. Last year, hogs were given to workers to raise, and the situation greatly changed: meat for meals increased and the losses of the farm decreased by more than 8 million yuan. Hog raising families increased their income by 100 to 200 yuan. Now, each person at the farm consumes an annual

average of 32 jin of meat, and it is said that some members of the production teams of the Seventh Branch farm of Jinghong farm consume an annual per capita average of 55 jin.

There are still some differences in understanding about readjusting and relaxing the economic policies for families, and they should be further resolved. Some people worry that workers do not have time to engage in family sidelines and that engaging in family sidelines will affect their work attendance. But workers do not look at it this way; they say that after completing the production task, there is time to engage in family sideline production. This is something the workers want and they will try to do it well. Others say that allowing workers to engage in family sidelines will create an imbalance between the rich and the poor, and there will be differences in life. This worry is unnecessary: differences in life are normal, the size of the family will create differences in life, wages themselves are different. Still others fear that when family sideline products enter the market, opportunism will occur. Actually, as long as the products are managed well, opportunism will not have any holes by which to enter, and it will not affect production.

We believe we should not discriminate against sideline production by workers' families, and it should not be limited. The amount of family sideline production at present is not too much, it is far from enough; it should be supported; it should be appropriately emphasized for workers to take up by themselves. The farms still have land, private plots of workers can be planted with vegetables and with feed; coffee, pepper, fruits and even trees can be planted in front and in back of houses.

9296
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POOR STATE OF TEA GROVES, LOW TEA PRODUCTION REPORTED

Kunming YUNNAN RIBAO in Chinese 16 Sep 81 p 3

/Article by Tu Xianzhang /1458 2009 4545/ and Ma Zhaoming /7456 0340 6900/: "Reform of Low Yield Tea Groves--One of the Ways to Increase the Province's Tea Output"/

/Excerpt/ Yunnan Province is the birthplace of tea plants and one of the nation's major tea growing areas, with an extremely wide variety of teas. Shrub or semi-shrub large leaf Yunnan varieties phenol, amino acids, and caffeine content is higher than that of any other tea plant variety, and the style and quality of tea made from their leaves is superfine.

"Yunnan Red" is famed worldwide, and pu'er tea is famed both in China and abroad. Because of its moderate climate, copious rainfall, the acidity of most of its soil, and the slight acidity of its red soil, its large areas of empty mountains, and the vast amount of soil suitable for the growing of tea, Yunnan Province has superb conditions for growing tea. Nevertheless, the province accounts for only six percent of the country's tea output, placing it in sixth position. From more than 1.4 million mu of tea groves with a picking area of somewhat more than 900,000 mu, in most years output fluctuates around only somewhat more than 300,000 dan, average yields per unit of area being about 40 jin, lower than the national figure.

Why is it that despite its "rich natural endowment" Yunnan Province has for long been a position of low output? The main reasons are as follows:

1. Scientific levels of tea cultivation are low; management is slipshod, and picking is not done in a sensible way with the result that the area of low yield tea groves increases more and more.

2. In the development of new tea groves, emphasis is onesidedly given only to increasing the area, and increases in per unit yields and quality are ignored. Some are alternately cultivated and left to grow wild, causing them to become old before their time.

3. Breeding and propagation of superior varieties of tea plants has not kept pace, and today the large leaf Yunnan tea varieties promoted for cultivation over wide areas are stock varieties. Some new areas have introduced to cultivation poor hybrid progeny whose growth is poor, resistance weak, and output consistently very low.

The current situation in the low yield tea groves of Yunnan Province is as follows: heavy erosion of slopes, a thin layer of soil, low fertility, dispersal on odd pieces of land, proliferating growth of weeds, a mixture of varieties, poor plant growth, and weak resistance. This results notably in a shortage of plants, a shortage of fertilizer, poor soil fertility, and small pickings. Such a tea grove has bleak long term prospects and barren short term prospects. Disease, insect pest and weed damage is severe, and lichens and moss grow all over the tea plants.

9432
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SEMI-ANNUAL DRIED RUBBER STATISTICS REPORTED

Beijing ZHONGGUO NONGKEN [STATE FARMS AND LAND RECLAMATION IN CHINA] in Chinese
No 8, 24 Aug 81

[Article compiled by JIHUA YU TONGJI [PLANS AND STATISTICS], Yunnan Provincial Agriculture and Reclamation Administration: "Increased Output of Dry Rubber for First Half of Year on State Farms in Yunnan Province"]

[Text] The Yunnan Provincial Agriculture and Land Reclamation Administration system increased output of dry rubber for the first half of the year, producing 8,437.93 tons of dry rubber in fulfillment of 49.1 percent of plan. This was a 3.9 percent increase as compared with fulfillment of plan during the same period last year, for an increased output of 1,125.53 tons of dry rubber, or an increase of 15.4 percent. The main reasons for the increased output were fine weather conditions during the early part of the slashing season, and just the right amount of rainfall, most of it concentrated in the afternoons. This helped production of rubber, and the handling of rubber, the production period being appreciable. Additionally the number of trees slashed during the first half of the year numbered 231,000 more than last year, and yield per tree was 0.155 kilograms more than for the same period last year.

9432
CSO: 4007/14

PROBLEMS AND POSSIBLE SOLUTIONS IN SYSTEM OF RESPONSIBILITY ILLUSTRATED

Hangzhou ZHEJIANG RIBAO in Chinese 17 Sep 81 p 1

/Article by Zhang Lingkai /1728 0109 0418/, Correspondent Station, Shaoxing Prefecture: "Good Handling of Four Problems in Perfection of Specialized Contracting System of Responsibility. Meishan Commune CCP Committee Helps Quanxin Brigade Implement Next Year's Contracting Quotas"/

/Text/ Fan Changji /2868 1603 4764/, secretary of the CCP Committee in Meishan Commune Shaoxing City led commune cadres to Quanxin Brigade to help improve work there and to gain firsthand experience in guiding overall work. The group summarized experiences with the masses in the implementation of specialized contracting, and in setting up a system of responsibility linking remuneration to output. They conscientiously handled four major problems, and 17 specialized teams and 4 specialized workers separately implemented a system of responsibility for next year's production, providing experiences for the entire commune in the further consolidation and perfection of specialized contracts in a system of responsibility in which remuneration is linked to output.

Quanxin Brigade has four production teams comprising a total of 13 grain and oil teams, four livestock teams, and four jasmine flower specialized workers, which have produced good results after almost a year of experience. Both agricultural production and diversification have seen fairly great development. In a discussion session with cadres and commune members, Fan Changji also learned that some contradictions and problems still existed in the implementation of the contract system of responsibility. Some people had a simple solution for these problems, namely "easing up on everything." Most people hoped to effect a change in regulations in contracting policies that were too restrictive or irrational. In order to institute a sensible system of responsibility for specialized contracting linking remuneration to output next year, Fan Changji and the others helped the brigade's party branch in the widespread gathering of commune member views, and then discussed each of them, one by one, with the masses. They also classified the views that everybody had provided into 11 problems, namely the way of calculating remuneration, the way of organizing teams, contract quotas, planning of crop distribution, group and team cadres, diversification, financial management, turning in of manure and accumulation of manure, the field workforce of contracting teams, management and use of farm machinery and implements, and overcoming egalitarianism within teams. They then set about perfecting implementation for each of them, giving special attention to handling of the four major problems.

Need for Streamlining of Method of Calculating Remuneration

This year Quanxin Brigade calculated work done on the basis of net earnings, and commune members expressed a fair amount of dissatisfaction with this method of calculating remuneration. They said, when work done is calculated on the basis of net earnings, grain production in excess of quota is converted to output value, and output value in excess of quota is converted into workpoints. All these conversions make us dizzy. They listened to the views of the masses and helped the brigade change from calculation of work done on the basis of net earnings to a system of "four fixeds and one award or penalty." By this was meant fixed output, fixed output value, fixed cost, and fixed workpoints with awards (including material awards) being offerred for all output (or output value) in excess of quota, or for savings in costs, and penalties being levied for all output (or output value) less than quota (except for exceptionally severe natural calamities, and the oil and grain team being penalized in the amount of consumption grain given it for default in output). Earnings in excess of contract quotas and earnings from the used of unused potential not contracted for were not to be witheld for accumulation. Such income would revert to the brigade for assured distribution to teams at year's end. Following these improvements, commune members said: "This is what we had hoped for; all details are clear; the policy is firm."

Need for Some Flexibility in Ways Teams Are Organized

This brigade still lacked flexibility in the way it organized teams for contract work. Commune members asked that there be greater flexibility next year. Consequently, improvements in next year's methods were discussed as follows. Provided they assured fulfillment of contract quotas for grain, the grain and oil team could devote a small amount of land to the growing of economic crops, and the team could contract the growing of these economic crops to specialized workers (or households), or they could give rebates to those doing this farming, subcontracting to those commune members who wanted to sign contracts. Such a method would both help development of economic crops and would help with the deployment of the workforce and rotational cropping of the land. Now 13 grain and oil teams have made plans for implementation of this method, deciding on the area and varieties of economic crops to be planted next year.

Need for Contract Quotas to Be Exemplary and Sensible

Commune members were rather concerned about the way the contract system of responsibility would work. They were particularly concerned about whether their quotas for next year would rise as other things rose. The brigade cadres and commune members had two different ideas about this problem. Brigade cadres felt that "if output increases each year, quotas should be raised a little each year as well." But the production team leader, the contract team heads, and commune members felt that if it is seen that this year's output is good and then next year's quotas are raised again, we will have no initiative. Fan Changji then did ideological work for the brigade cadres, explaining that quotas should be both exemplary and reasonable. Once the cadre's thinking had been straightened out, they clearly stated to commune members that next year's quotas would not rise as part of a general increase, but would remain essentially stable on this year's foundation, and that the irrational quotas set last year would be properly readjusted. In addition, following discussion and decision by commune members, contract team earnings derived from exploiting unused

potential in the growing of crops on marginal land would not be made a part of the quota. With no increase in the quotas, the initiative of everyone was aroused for current late rice crop production to win a bumper harvest for the year as a whole.

Need for a Combination of Responsibility, Authority, and Profit in Planning Crop Distribution

In past years, crop distribution patterns handed to production teams by production brigades were in the form of directives. The area to be sown to spring grain was rigid, and if any percent of it was deducted or not planted, grassland had to be plowed under. Commune members were much dissatisfied at this. Fan Changji first explored experiences at the fourth production team. Having summarized the lessons of experience, this team had made plans for this years winter planting. Of the 190 mu of fields in the team, 3.7 percent would be used for the growing of economic crops, and 49 percent would be used for the growing of barley, wheat, and soybeans as spring grain crops. Furthermore, the 1981 and 1982 distribution of winter crops to be harvested in summer were compared. Though the spring grain area planted in 1981 amounted to 60 percent of the total, because of the large area much work had to be done and the workforce was hard pressed to do it. It was difficult to concentrate forces to try to increase per unit yields. As a result, yields were only 414 jin per mu, and total output amounted to only 45,878 jin. With the 1982 distribution pattern, however, even though the proportion of the area devoted to spring grain had been reduced, as a result of the expansion of the area planted to rape and soybeans, the workforce could be better deployed, and the conflict in seasons moderated. Thus it was possible to devote the energy necessary to increasing per unit yields and get barley and wheat yields of 524 jin per mu, and a total output of 46,714 jin. This quota had more leeway in it as compared with the 1979 spring grain yields of 577 jin per mu, and though it was higher than actual output in 1981, it would be entirely possible to exceed it with effort. The mutual agreement of the fourth production's team's planning guidance and the desires of the masses much inspired Fan Changji. He used the fourth production team's experiences to convince and indoctrinate the brigade cadres whose thinking had formerly not been straightened out. As a result, in its guiding mentality, this brigade was able to completely carry out a program of "positively no relaxation in grain production with active development of diversification." There would be no further tieing up of the area planted, and contracting teams would be allowed, under the guidance of the production team, to lay out their own crop distribution to meet quotas, with plans being made for each field. The commune members were very satisfied with such arrangements for the planning of crop distribution.

Having used the Quanxin Brigade as a test site, the Meishan Commune CCP Committee carried out discussions and inspections of several other brigades where, in accordance with the spirit of pertinent documents from higher authority and the desires of the masses, they formulated ideas for reference in carrying out next year's policies for specialized contracting in a system of responsibility linking remuneration to output. All production brigades are now in process of summarizing this year's practical experiences, production team by production team, adapting general methods to local situations for the perfection and implementation of next year's system of responsibility.

9432
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GREATER CADRE EFFORTS ON SYSTEM OF RESPONSIBILITY DURING COMING YEAR URGED

Hangzhou ZHEJIANG RIBAO in Chinese 17 Sep 81 p 1

/Article by Commentator: "Implementation of Next Year's System of Responsibility in Agriculture Requires Strengthening of Leadership"/

/Text/ Throughout this year, all echelons of the party organization in the province have done a great amount of work in strengthening the system of responsibility for production in agriculture, and the number of units instituting various forms of a system of responsibility for production have increased more and more, adding a new vitality to agricultural production, and bringing about remarkable changes, particularly in the formerly somewhat laggard units. These facts have made many comrades deeply realize, as time went by, the importance and necessity of strengthening and perfecting the system of responsibility for production in agriculture, consequently straightening out their thinking and strengthening leadership.

Nevertheless, the mental understanding and actual work done by some comrades has not kept pace. In some places there has been no active and positive discussions with the masses, respect for the wishes of the masses, leading of the masses in an adaptation of general methods to local circumstances to build and perfect a system of responsibility, or help given the grassroots in solving problems that have arisen. Instead there has been evasion of contradictions, an abnegation of leadership, and a throwing up of the hands and not taking charge. In some places today, fields and land have been divided up on a per capita basis in a willful division of collective property, and a willful breaking up of collectively-operated industry and sideline occupations, or even wantonly felling collective mountain forests, mulberry trees, and fruit trees, for a serious situation. The major reason for this is that the leaders in those places are weak and ineffective, and have a laissez-faire attitude. This problem should arouse the serious attention of all echelons of leadership.

Now is the key time when winter planting plans are being made, and the time when next year's system of responsibility for production is being implemented. In all echelons of the party organization in rural villages, action must be taken by the principal comrades in charge themselves, and the opportunity seized for diligent summarization of the lessons of experience during the previous work phase, realistic and effective measures being taken to solve currently existing problems, so that all forms of the system of responsibility will be steadily perfected and consolidated.

In places where work has been slipshod and problems fairly numerous heretofore, in particular, this opportunity should be firmly grasped and work meticulously done to decide on what form of a system of responsibility for production is to be implemented next year, to change the passive into the active.

In order to further implement the system of responsibility for production in agriculture, it is necessary, first of all, to straighten out the mentality, stir up spirit, and firmly believe that the programs and policies of the party are correct, and are for the consolidation and development of the socialist collective economy, allowing the peasants to become prosperous with all possible speed, and are not some kind of "going it alone." It is necessary to believe firmly that the overwhelming majority of peasants want to take the socialist road, and that what they urgently want to get rid of is the evils of "eating out of a large common pot" and egalitarianism, and positively not to get rid of socialism. When building and perfecting a system of responsibility for production in agriculture, everything that is in line with the programs and policies of the CCP Central Committee, and is in line with the desires of the majority of the masses should be supported, and may be promoted in an adaptation of general methods to local situations. Everything that contravenes the programs and policies of the CCP Central Committee, and contravenes the desires of the masses, one must dare to stop and correct. Right now, two main problems exist as far as the leadership mentality is concerned. One is that a minority of cadres have had their mentality quite deeply affected by "leftism." They lack sufficient understanding of the importance and urgency of strengthening and perfecting the system of responsibility for production in agriculture. Their mentality has not been sufficiently emancipated; they do not take a firm grip on work; they have not conscientiously summarized representative experiences, or given specific guidance. They do not much understand the demand of the masses for a system of responsibility, and they do not appreciate the problems that have existed for many years in the administration and management of the collective economy. They are satisfied with old experiences, and do not actively study and improve. Individual places have even simplisticly formulated several "don'ts" that fetter the hands and feet of the masses. In still other cases, when some cadres "lock horns" with the masses and get the worst of it, they become complacent, deciding that the masses can do as they please, abnegating their leadership responsibilities. When wrong ideas and wrong ways of doing things crop up, they do not carry out ideological training or actively give guidance. Some do not probe reality; they lack personal practical experience, drifting along with the breeze, or rushing headlong into rash action, creating apathy. Experience has shown that these erroneous ideas are very unfavorable in the implementation of various forms of a system of responsibility. We must straighten out our mentality, arouse our spirit, and bravely and concretely strengthen leadership. Only by so doing can a good job be done with the system of responsibility for production.

The building and perfecting of systems of responsibility must be done in accordance with the spirit of the documents from the CCP Central Committee pertaining to the strengthening and perfection of systems of responsibility. Abiding by production relationships definitely requires following the laws of the development of production, taking as the point of departure the different ingredients of production, the economic structure, and the level of management of individual places, adapting general methods to local situations, giving tailored guidance, adopting various forms of a system of responsibility, not acting with arbitrary uniformity or treating every situation in the same way, and not using a particular form to negate another form. In Zhejiang Province, the productivity of most communes and brigades is fairly high; diversification

fairly well advanced; and the collective economy fairly well consolidated. We must actively promote specialized contracting and a system of responsibility linking remuneration to output. The fields of paddy rice, tracts of tea groves, orchards, and mulberry groves, and numerous sideline occupations should generally be contracted out to teams. A smaller number of diversified things can be contracted out to individual workers or to households. Places that have already gained experience may also implement unified operations, placing responsibility for production on individual laborers. In economically distressed communes and brigades with backward production, when the masses ask that contracting for production on an individual household basis or contracting for work on an individual household basis be instituted, it should be permitted. But there must be real strengthening of leadership and active assistance in setting up such systems, with no letting things drift or spontaneous division of fields on a household basis.

All echelons of the party organization must meticulously and thoroughly study and analyze the state of existing systems of responsibility of all kinds and problems existing therein, and of the real thoughts and demands of the masses and cadre in every aspect, so as to really know what to do. They must diligently summarize representative experiences that meet circumstances in different kinds of communes and brigades in local areas, adopt the method of mutually linking leadership and the masses, and decide on which form of a system of responsibility for production should be emphasized for promotion in local areas.

In strengthening and perfecting a system of responsibility for production in agriculture, in addition to straightening out the mentality of leaders, of importance is conscientious training of cadres, truly changing the situation in which some cadres are not fully aware of, do not understand, or do not care about the system of responsibility. A good job in the system of responsibility requires that the broad masses of cadres give concrete guidance and help. Unless cadres are first trained well, have their understanding unified, and taught how to do things, it will be very hard to do the work. In order to do a truly good job of training cadres, advantage should be taken of the period just before the autumn harvest to rotate commune cadres and the more important cadres in brigades through training, so they can really straighten out their ideology and learn ways of doing things.

If all echelons of the party organization will only truly strengthen leadership, and do a solid job, the system of responsibility for production in agriculture will certainly be further perfected, and next year's agricultural production will certainly be done even better.

9432
CSO: 4007/19

PROVINCIAL REPORT ON 1982 RAPE, WHEAT PLANS PUBLISHED

Hangzhou ZHEJIANG RIBAO in Chinese 18 Sep 81 p 1

/Article by Fu Cong /0102 3222/: "Provincial People's Government Issues Document Calling Upon All Jurisdictions to Plan Rape Areas While Increasing Wheat Growing Appropriately"/

/Text/ The Provincial People's Government has recently sent forward to provincial agricultural committees, financial institutions, and materials committees "A Report on Arrangements to Be Made for the Winter Farming Area and Appropriate Readjustments in Requisition Procurement Policies for Wheat and Rapeseed." The report pointed out that during the past several years, Zhejiang Province's rape growing area, output, and quantities procured have all risen rapidly. As a result of the great development of rapeseed, the area, output, and quantity procured of wheat has declined relatively. Wheat is quite a good feed for raising hogs, and it is also a raw material for the production of beer, and it is very much in demand currently both inside and outside the province. Meanwhile, the great development of rapeseed has posed quite a few difficulties for all links including procurement, processing, and storage. In order to change this state of affairs, the report called upon all communes and brigades, and all commune members in the province to make planned arrangements for this winter's wheat and rape planting area, and it set readjustments in requisition procurement policies beginning in 1982 as follows: 1. For wheat: Except for the procurement and supply price, which will continue in accordance with existing regulations, Erleng wheat, for which the province made unified arrangements for supply to breweries as raw materials, will be priced in accordance with negotiated sales price (which is 50 percent more than the state monopoly list purchase price); 2. For rape: In view of the actual level of procurement and requirements for supply of the past several years, the province plans to procure 400 million jin of rapeseed, quotas to be distributed to counties, with no change guaranteed for 3 years. As per existing regulations, within the planned procurement, 60 million jin will be bought at parity, and 340 million jin will be purchased at a higher price, the purchase price to endure without change, and the award sales of grain for that portion purchased at parity to be cancelled. Rapeseed in excess of procurement plans will be disposed of according to the wishes of producer units and commune members. Should they desire to sell it to the state, it will be purchased at parity. The report reiterated the need for all jurisdictions to take firmly in hand wide-ranging propaganda among the broad masses of commune members before winter planting begins, clearly setting forth the reasons, and rapidly implementing rapeseed procurement plans in production units.

9432
CSO: 4007/19

JIAXING CITY ACHIEVES SURPLUS IN FOOD GRAIN PROCUREMENT

Hangzhou ZHEJIANG RIBAO in Chinese 30 Aug 81 p 1

[Article: "Jiaxing City Provides Over 300 Million Jin of Commercial Food Grains in One Season of Early Rice; the City Completes the Whole Year's Food Grain Procurement Task With a Surplus of 100 Million Jin"]

[Text] Hangzhou, 29 August--As of 28 August, Jiaxing city in Zhejiang Province had already sumbitted for sale to the state over 350 million jin of food grains, completing the whole year's food grain procurement task with a surplus of 100 million jin. The one season of early rice provided over 300 million jin of commercial food grains.

Jiaxing is located in one of our nation's key food grain producing regions. This year, as a result of the further purging of the leftist influence, the party's policy entered deeply into the people's hearts. The cadres and masses worked and struggled hard, the level of scientific planting was high, and with favorable natural conditions, the whole city produced a bumper harvest of early rice over more than 596,000 mu, following a bumper harvest of spring food grains. This year, although the area of early rice was over 20,000 mu less than last year, the unit yield and the total yield both surpassed those of 1979, the highest year in history. After the bumper harvest, the broad number of farmers actively submitted for sale to the state public food grains and sold suprlus food grains, the progress of storing the food grains was fast, and the quality of the food grains submitted for sale to the state generally reached or surpassed the standards set by the state.

9296
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AGRICULTURE

No. 173

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13 November 1981

CHINA REPORT

AGRICULTURE

No. 173

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

Progress in Non-Staple Food Production Reviewed
(GUANGMING RIBAO, 3 Oct 81) 1

Cautions Issued on Overexpansion of Sunflower Production
(Fu Fuqin; RENMIN RIBAO, 13 Oct 81) 3

Metalignitous Coal Used To Produce Fertilizer
(Liu Bingqi; GUANGMING RIBAO, 18 Sep 81) 5

Immunization of Pigs With Brucella Suis Vaccine
(Xie Xin, et al.; XUMU SHOUYI XUEBAO, No 3, 1981) 6

Briefs
Shandong, Liaoning Cotton Procurement 8
Farm Sideline Products 8

Anhui

Briefs
Tianchang County Crops 9

Fujian

Overfulfillment of Grain Quotas Attributed to Peasants Who Are Motivated
(FUJIAN RIBAO, 2 Oct 81) 10

Unprecedentedly High Intermediate Maturing Late Rice Yields Reported
(Wang Zhicheng, et al.; FUJIAN RIBAO, 30 Sep 81) 11

Briefs
Nanan County Winter Sowing 13
Funding County Economic Diversification 13
Sanming Prefecture Diversified Economy 13
Rosin Output 13
Rapeseed Procurement 14

Guangdong

Increased Importance of Sideline Production Cited
(NANFANG RIBAO, 30 Sep 81) 15

Hebei

Further Spread of System of Responsibility for Wheat Growing Reported
(HEBEI RIBAO, 28 Aug 81) 16

Heilongjiang

State Farms Make Effort To Save Wheat Crop
(Liu Ruiwu; RENMIN RIBAO, 11 Oct 81) 19

Hubei

Future of Wheat Production in Hubei Reviewed
(HUBEI RIBAO, 21 Sep 81) 21

Linking Planned Output to Remuneration Extolled
(Tian Xiangwen; HUBEI RIBAO, 21 Sep 81) 26

Briefs
Cattle Breeding Directive 28

Hunan

Briefs
Commodity Grain Bases 29
Lumbering Circular 29

Jiangsu

Annual Freshwater Fish Output of Major Producing Counties Given
(XINHUA RIBAO, 25 Sep 81) 30

Briefs
Ganyu County Peanut Harvest 32
Sihong County Grain Output 32

Jiangxi

Briefs
Oil Procurement 33

Shaanxi

Information for Fall Harvesting, Sowing Given
(SHAANXI RIBAO, 19 Sep 81) 34

Yunnan

All-Time High Output of Tea Reported
(Su Fanghua; YUNNAN RIBAO, 12 Sep 81) 37

Briefs
Grain Purchase Meeting 38

Zhejiang

Questions on Rural Economic Practices Clarified
(ZHEJIANG RIBAO, 15 Sep 81) 39

II. PUBLICATIONS

Briefs
Rural Yearbook 42

ABSTRACTS

AGRICULTURAL RESOURCES

ZIRAN ZIYUAN [NATURAL RESOURCES] No 3, Sep 81 43

ANIMAL HUSBANDRY

XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE] No 4, 20 Aug 81 45

ZHONGGUO SHOUYI ZAZHI [CHINESE JOURNAL OF VETERINARY MEDICINE] No 8, 22 Aug 81 46

PHYTOPHYSIOLOGY

ZHIWU SHENGLI XUEBAO [ACTA PHYTOPHYSIOLOGIA SINICA] No 3, Aug 81 .. 47

VETERINARY SCIENCE

XUMU SHOUYU XUEBAO [ACTA VETERINARIA ET ZOOTECHNICA SINICA]
No 3, 1981 53

VETERINARY RESEARCH

SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY]
No 8, 20 Aug 81 55

I. GENERAL INFORMATION

PROGRESS IN NON-STAPLE FOOD PRODUCTION REVIEWED

Beijing GUANGMING RIBAO in Chinese 3 Oct 81 p 1

[Article: "Bolster Scientific Research on Vegetables, Milk, Eggs, Meat and Fruits; Beijing Agricultural Scientists and Technicians Make Contribution to Quickening Construction of Suburban Non-staple Foodstuffs Bases"]

[Text] Following a program of "service to the capital and prosperity for the peasants," Beijing municipal scientists and technicians have intensified scientific research on vegetables, milk, eggs, meat, and fruits to make a contribution to hastening building of a Beijing suburban non-staple food base.

As a result of investigation, research, and wideranging collection of data, capital city agricultural scientists and technicians last year presented "A Preliminary Comprehensive Agricultural Zoning Report for Beijing Municipality," which divided suburban Beijing into five category 1 zones for vegetables, grains, grains and fruits, fruits, and forests, and 17 category 2 zones, and designated the direction of development of each zone, providing scientific data for the readjustment of the structure of agriculture and rational planning of diversified production patterns. In the mountain areas that account for two-thirds of the total area of suburban Beijing, the tendency toward a single grain crop economy has already begun to change, and the emphasis has shifted to development of forests and fruits. The area of Beijing in which Chinese chestnut growing was formerly concentrated is gradually being restored to chestnut production, and some of Beijing's native handicraft production is also gradually reviving and developing.

In view of the needs of markets in the capital city, during the past 2 years Beijing municipal agricultural scientists and technicians and scientists and technicians of relevant units have worked together to bolster scientific research and the spread of scientific and technical knowledge about vegetables, milk, eggs, meat, and fruits. Eight superior hybrid combinations of early, intermediate, and late maturing cabbages are now grown on 99 percent of the 20,000 mu area that comprises the city's cabbage growing area, lengthening the period of cabbage supply in the city's markets. A group of Chinese cabbage hybrid varieties that they have bred is grown on a 40,000 mu area, which is 50 percent of the area devoted to the growing of Chinese cabbage. An annual increased output of between 100 and 200 million jin of these Chinese cabbages is possible. The spread of these two accomplishments can each increase annual peasant earnings by more than 2 million yuan. Taking note of the general year after year virus disease that reduced tomato yields, they bred disease resistant, high yield new varieties "Jiahong," and "Jiafen No 1," which are now in process of being spread.

In order to advance development of the livestock industry, livestock veterinary medicine scientists and technicians successfully separated live virus of malikeshi [7456 4539 0460 3044 4016] disease in chickens and successfully reproduced a weakened virus vaccine to immunize against this chicken disease, the use in production of which played a major role in controlling malikeshi disease in chickens. They experimentally promoted forced artifical moiting of chickens and evaluated young chick characteristics on the basis of their feathers to increase annual chicken egg output, reduce production costs, and advance specialization of production. Additionally, they bred a superior quality hybrid hog with a lean meat rate of more that 50 percent, "Duchangbei." In the feeding of hogs and chickens, they promoted used of mixed feeds, which conserved feed, and increased the slaughter rate for hogs and the egg production rate of chickens. In order to improve the situation in cow's milk in which supply could not keep up with demand, the Milk Cow Institute of the State Farm Management Bureau successfully experimented with early weaning of calves and techniques for accelerating cow reproduction.

In order to enrich the supply of fruits in the market, forestry scientists and technicians intensified research on peaches, Chinese chestnuts, strawberries, cherries, the fruit of Chinese hawthorne, watermelons, and grapes, and have now bred a series of early, intermediate, and late ripening peach varieties, the early ripening variety of which reaches market at the end of June each year. The late ripening variety can be held until just before the national anniversary [1 October] for harvesting. The two chestnut varieties, "Yanshan Hongli" and "Yanfeng," which they bred, have been successfully grafted on more than 300,000 plants in suburban Beijing. Research on the greening and beautification of the hilly areas and scenic areas of the capital city's environment is also being pressed.

9432
CSO: 4007/44

CAUTIONS ISSUED ON OVEREXPANSION OF SUNFLOWER PRODUCTION

Beijing RENMIN RIBAO in Chinese 13 Oct 81 p 3

[Article by Fu Fuqin [0265 4395 0530], Oil Crops Institute, Chinese Academy of Agricultural Sciences: "Several Problems To Be Watched in Expanding Sunflower Production"]

[Text] The economic value of sunflowers is high; the quality of their oil is good, and they are characterized by tolerance of drought, and salinity-alkalinity, which make them an oil-bearing crop suitable for sowing in China's arid, semi-arid, and saline-alkaline northern areas. According to 1980 statistics, the national area sown to sunflowers was 12 million my, making them one of China's five major oil-bearing crops.

However, several problems have appeared in sunflower output, which should arouse the serious attention of agricultural departments and pertinent research units. These problems are principally the following:

1. Some communes and brigades grow crop after crop on the same soil.

Sunflowers consume a fair amount of fertilizer, and should not be continuously cropped. Longterm continuous cropping can excessively deplete soil fertility, and it can also intensify outbreaks of sunflower diseases and insect pests.

2. In many places today, sunflower diseases are becoming more and more serious, rust, brown patch, black spot, and wilt causing particularly great damage.

3. Sunflowers have numerous empty husks or husks half-filled with seeds for a general loss in output of 15 to 20 percent, or as high as around 40 percent.

4. Sunflower species have become mongrelized and serious degeneration has occurred. Because plant heights on the same plots are not even, they do not ripen at the same time, causing problems both for hand and machine harvesting.

I propose action in the following ways to solve the aforestated problems:

1. In the production of sunflowers, attention must be given the principle of combining soil use and soil nurture, practicing rotational cropping of different crops. The crops grown on each plot should be rotated once every three years. Crops of the grass family and pulses (including pulses grown as green manure) are an ideal crop

to be grown just ahead of sunflowers. In addition, intercropping, and interplanting is a pretty good way of avoiding multiple cropping of the same crop.

2. Intensification of research and methods of prevention and control of sunflower diseases and insect pests. Units currently engaged in sunflower research and plant protection research forces are weak. Meanwhile sunflower diseases and insect pests are presently a production problem in urgent need of solution. Forces must be organized for all out research on measures for resistance to, prevention, control and avoidance of sunflower diseases and insect pests.

3. Improvement of farming methods and intensification of field care. Fertilization must be done sensibly, proper amounts of nitrogenous fertilizer must be applied, and attention must be given fertilization with phosphate and potash fertilizer. In order to improve the fruiting rate, in addition to artificial means of aiding pollination, beekeeping should be promoted in large sunflower growing areas. One hive of bees for every 5 mu can solve the problem of aiding pollination over wide areas.

4. Adaptation of general methods to specific situations in a sensible juxtaposition of other oil-bearing crops. Oil-bearing crops should be grown in a sensible cropping pattern. Concentration on a single specie may diminish capacity to withstand natural diseasters. In addition to expanding sunflowers to arid, semi-arid, and saline-alkaline land, the edible oil crop, safflower, may also be planted. Safflowers are a crop that finds use both for edible oil and in pharmaceuticals. Their economic value is high; their adaptability is wide; and their drain on soil fertility is less than from sunflowers. The linoleic acid content of safflowers is also greater than that of sunflowers. The growing of a suitable amount of safflowers together with sunflowers will permit not only fairly high economic benefits, but will also make possible steady continued expansion of sunflowers.

9432
CSO: 4007/45

METALIGNITOUS COAL USED TO PRODUCE FERTILIZER

Beijing GUANGMING RIBAO in Chinese 18 Sep 81 p 1

[Article by Liu Bingqi [0491 3521 3823]: "Use of Metalignitous Coal as a Raw Material For Production of Chemical Fertilizer; Chemical Fertilizer Industry Institute of Ministry of Chemical Industry Wins Major Breakthrough After More Than 3 Years of Concerted Effort"]

[Text] Can metalignitous coal be used as a raw material for the production of chemical fertilizer? After more than 3 years of concerted effort, the Chemical Fertilizer Industry Institute of the Ministry of Chemical Industry finally has won a major breakthrough.

They scrapped the traditional producer gas cycling system and used a new firing chamber method of operation, and they built a metalignitous "one step method" intermediate experimental installation that manufactures synthetic ammonia as a raw material gas. Results of experiments have shown that use of this new technological flow process represents somewhat of an improvement in existing small nitrogenous fertilizer equipment in that it can use metalignitous coal as a raw material for the direct manufacture of synthetic ammonia as a raw material gas in the same way that anthracite coal can be used.

Most of the thousands of nitrogenous fertilizer plants throughout the country formerly used anthracite coal as a raw material. However, numerous provinces and regions have no anthracite coal to use as a raw material. The high cost of output of small nitrogenous fertilizer plants resulting from the need to haul coal by train became a common phenomenon. In early August, The Shaanxi Provincial Science Commission conducted a technical appraisal and evaluation of the "one step method" technological flow process successfully researched by the Chemical Fertilizer Industry Institute, and experts concerned from everywhere in the country were of the opinion that it would play a major role in promotion of the chemical fertilizer industry in places lacking anthracite coal, and in the gasification of cities and towns.

Use of the "one step method" of coal gas gasification can more than double thermal energy utilization, and it eliminates smoke and dust pollution as well. Specifically, use of this new technique for manufacturing gas does not need addition of pressure, does not require manufacture of oxygen, does not require huge investment for construction of new plants, and can make full use of the thousands of small nitrogenous fertilizer plants throughout the country. It also opens broader vistas for the gasification of cities and towns.

9432
CSO: 4007/44

IMMUNIZATION OF PIGS WITH *BRUCELLA SUIS* VACCINE

Tianjin XUMU SHOUYI XUEBAO [ACTA VETERINARIA ET ZOOTECHNICA SINICA] in Chinese
No 3, 1981 pp 175-180

[Article by XIE Xin [6200 2500] and LIANG Xihao [2733 1585 3185], both of the Control Institute of Veterinary Bioproducts and Pharmaceuticals, Ministry of Agriculture, Beijing; WEI Xin [5898 1823; deceased], TAO Zhiqi [7118 1807 3825] and TANG Cuiying [0781 5050 5391], all of the Veterinary Research Institute, Guangxi Province: "Immunization of Sheep, Goats, Cattle and Pigs with *Brucella suis* Strain 2 Vaccine. III. Tests on Pigs"]

[Summary] *Brucella suis* strain 2 is capable of inducing immunity in swine against experimental infection. In three experiments 20 boars were immunized subcutaneously with about 20 x 10^9 organisms of *Brucella suis* strain 2 (5 of them received a booster dose 73 days later), 10 were vaccinated with 20 x 10^9 organisms of strains 19 and 20 served as controls. Sixty to seventy days later all animals were challenged subcutaneously with about 10^9 organisms of a virulent strain of *Br. suis* biotype 3 and 45 days after challenge they were killed. Cultural and biological examinations (inoculation of guinea pigs) were made of lymph nodes and visceral organs. Brucella infection was demonstrated in 11 of the 20 animals given strain 2, compared with 18 of the 20 controls. The infection index (number of organs infected/number of organs cultured x 100) of the vaccinated animals was 7.1 percent only, whereas that of the controls was 50 percent. It is obvious that the vaccinated animals cleared their tissue of cultivable brucella much more quickly than did the controls. In the strain 19 group, all 10 of the vaccinated animals yielded brucella and had an infection index of 58 percent, indicating that strain 19 did not confer protection in boars against brucella infection.

The potency of *Br. suis* strain 2 vaccine had been tested on sows in three experiments. In the first experiment 20 sows were vaccinated subcutaneously with 17 x 10^9 organisms of strain 2 and 17 were controls. After vaccination they were mated with experimentally infected boars which excreted brucella in their semen. Within five months after service, only seven of those vaccinated became pregnant and three of them aborted afterwards. In the 17 controls, 5 became pregnant and 3 aborted. No great difference was observed between the vaccinated and controls. Serving the experimental sows with brucella-excreting boars obviously reduced the conception rate of the animals and caused abortion whether the served sows were immunized or not. In the second experiment 10 sows were inoculated with double doses of strain 2 vaccine containing about 20 x 10^9 organisms each at an interval of 30 days. Ten

other sows served as controls. One month after vaccination they were mated, this time with brucellosis-free boars. When the majority of the sows were about two to three months pregnant, they were challenged subcutaneously with 5.8×10^4 organisms of a virulent strain of Br. *suis* biotype 3. All animals were killed after abortion or normal parturition and all aborted fetuses, newborn piglets, placentas, vaginal secretions, milk, lymph nodes and organs were studied bacteriologically. None of the 10 vaccinated animals aborted, but one became infected. Of the 10 controls, 7 showed serious infection. The third experiment was performed on the same line as the second with variations in the doses of the vaccine (the initial doses contained 50×10^9 organisms, the booster dose, 42×10^9 organisms) and the challenging dose (14.5×10^4 organisms). None of the 10 vaccinated animals aborted, but 2 became infected. Of the eight controls, none aborted but seven yielded brucella in placentas, vaginal secretions and/or milk. It was concluded that Br. *suis* strain 2 vaccine conferred considerable immunity against subcutaneous challenge in sows, but not against intra-uterine infection.

9717
CSO: 4009/69

BRIEFS

SHANDONG, LIAONING COTTON PROCUREMENT--Beijing, 27 Oct (XINHUA)--Shandong Province, one of China's leading cotton producers, purchased 270,000 tons of ginned cotton by 23 October, overfulfilling the annual purchasing quota by 2 percent, or 22.8 percent more than the same 1980 period, according to the provincial supply and marketing cooperative. The province is still purchasing 10,000 tons of ginned cotton daily, the cooperative said. Last year, provincial ginned cotton output was 535,000 tons. Liaoning Province in the northeast reported a ginned cotton output of 22,500 tons this year, a 5.4 percent increase over last year. By 15 October, the province had purchased 11,050 tons of ginned cotton, 54 percent more than the same 1980 period. [Text] [Beijing XINHUA in English 0807 GMT 27 Oct 81 OW]

FARM SIDELINE PRODUCTS--Beijing, 30 Oct (XINHUA)--During the first 3 quarters of this year, peasants in China have sold 5.9 billion yuan more farm and sideline products to the state as compared with the same period last year. [Beijing XINHUA Domestic Service in Chinese 1138 GMT 30 Oct 81 OW]

CSO: 4007/64

BRIEFS

TIANCHANG COUNTY CROPS--Tianchang County, Anhui, reports a total grain output of more than 700 million jin this year, a 20 percent increase over that of last year. The county's total cotton output of 65,000 dan this year is double that of the last year. Its total output of oil-bearing crops this year is 2.5 times that of the last year. [OW020935 Hefei Anhui Provincial Service in Mandarin 1100 GMT 1 Nov 81]

CSO: 4007/64

OVERFULFILLMENT OF GRAIN QUOTAS ATTRIBUTED TO PEASANTS WHC ARE MOTIVATED

Fuzhou FUJIAN RIBAO in Chinese 2 Oct 81 p 1

[Article from Purchase and Sales Section, Provincial Grain Department: "Entire Province Overfulfills Early Crop Grain Requisition Procurement Quotas. The Four Prefectures and One Municipality of Jianyang, Longqi, Putian, and Xiamen as Well as 44 Counties and Municipalities Overfulfill Quotas; More Than 50 Commune Member Households Single Crop Sales of Grain Amount to 10,000 Jin"]

[Text] The entire province has overfulfilled early grain crop requisition procurement quotas. As of 25 September, 100.66 percent of the province's spring and summer grain requisition procurement was in warehouses in overfulfillment of plan. Jianyang, Longqi, Putian, and Xiamen, as well as 44 counties and municipalities, overfulfilled quotas. Ningde Prefecture and Fuzhou Municipality have fulfilled and put into storage their requisition procurement quotas of double crop early rice. Though Fujian Province's early rice crop was stricken this year with a May cold wave unprecedented in 100 years, as well as with neck blast of rice, which reduced total output from last year, thanks to the all around promotion in the province last winter and this spring of various forms of a system of responsibility for agricultural production, the putting into effect of a policy of requisition procurement grain quotas being guaranteed free from change for a period of 5 years, and the signing of requisition procurement grain contracts, the enthusiasm of the peasants for producing grain and for turning over excess grain to the state was greatly aroused. Jianyang Prefecture's early crop requisition procurement quota of 396 million jin was fulfilled 13 days early than last year, after which another more than 100 million jin continued to be sent to storage. After the commodity grain bases of Pucheng, Jianyang, Jianou, Shaowu, Chongan, Longhai, Zhangpu, Nanjing, Changtai, Pinghe, Ninghua, and Jianning had fulfilled their quotas, they sold an additional more than 126 million jin of excess grain to the state. More than 50 peasant households in the province sold grain from a single crop amounting to 10,000 jin.

9432
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UNPRECEDENTEDLY HIGH INTERMEDIATE MATURING LATE RICE YIELDS REPORTED

Fuzhou FUJIAN RIBAO in Chinese 30 Sep 81 p 1

[Article by Wang Zhicheng [3769 1807 4453], Zheng Deping [6774 1795 1627], and Lin Zhangtang [2651 4545 2768]. "Good News Reported On Fujian Province's Intermediate Maturing Late Rice Crop. Yields Between 30 and More Than Jin Per Mu More Than Last Year from the More Than 200,000 Mu Already Harvested"]

[Text] This year's 3.7 million mu of single crop intermediate maturing late rice is continuing to be harvested throughout Fujian Province. All prefectures report that outputs increase as harvesting continues. It is estimated that this year will mark an all-time record harvest of intermediate maturing late rice.

Most of Fujian Province's single crop intermediate maturing late rice is grown in the mountain regions of northern, western, eastern, and southern Fujian where yields used to amount to only between 300 and 400, or 400 and 500 jin per mu. This year marked a breakthrough in this state of affairs. Ever since harvesting began, good news of a bumper harvest proliferated as batches of high yield fields and bumper yield tracts appeared. In Ningde Prefecture, where harvesting began fairly early and where more than 90,000 mu have already been harvested, yields have averaged 527 jin per mu, an increase of 34 jin per mu over last year from the same area. Luoyuan County planted somewhat more than 52,000 mu of single crop intermediate maturing late rice this year, of which more than one-half has already been harvested, for yields averaging increases of 115 jin per mu. Zhongfang Commune in this same county has already completed the harvesting of the somewhat more than 13,000 mu of intermediate maturing late rice it planted for yield increases averaging 131 jin per mu and a 40 percent increase in total output. A 26 percent yield increase is predicted for the entire county. Putian Prefecture has harvested somewhat more than 32,000 mu for yields of 628 jin per mu, yield increases of 40 jin per mu. This year Yongtai County planted somewhat more than 92,000 mu of single crop intermediate maturing rice, of which somewhat more than 25,000 mu has been harvested for yields of 700 jin per mu, which is a 10 percent increase over last year. Jinjiang Prefecture has harvested 5,000 mu with yield increases of 50 jin per mu. Jianyang and Longyan Prefectures, which planted the most single crop intermediate maturing late rice have harvested between 10,000 and 20,000 mu for yields that have increased by 20 to 30 jin per mu over last year. In Sanming Prefecture, this year's rice crop also grew very well. From the somewhat more than 10,000 mu of it harvested, yields are higher than last year. According to statistics as of 25 September, more than 200,000 mu of intermediate

maturing late rice has been harvested throughout the province for yields averaging 512 jin per mu, a between 30 and 40 jin increase over last year for the same area.

The main reason for the bumper harvest of single crop intermediate maturing late rice this year has been the arousal of enthusiasm for production of commune members in the wake of implementation everywhere of a system of responsibility for production. Peasants in communes and brigades in mountain regions, in particular, have acted on the basis of existing realities, have adapted general methods to local situations in the readjustment of grain crop patterns, have changed to single crop rice growing in those fields not suited to the growing of double crops of rice, increasing by more than 140,000 mu the single crop intermediate maturing late rice crop growing area in the province. Additionally, there has been a general spread of superior varieties, hybrid rice accounting for more than 70 percent of the total acreage. This, plus the serious attention given science and technology, the intensification of water and fertilizer management, and prevention and control of diseases and insect pests has promoted growth of rice seedlings and assured increased yields.

9432
CSO: 4007/47

BRIEFS

NANAN COUNTY WINTER SOWING--Nanan County, Fujian Province, is making preparations for winter sowing. This year it will grow some 30,000 mu of rape, more than double the acreage of last year. More than 30,090 dan of wheat seeds have been made available, and some 10 million dan of farmyard manure have been prepared. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 31 Oct 81 OW]

FUNDING COUNTY ECONOMIC DIVERSIFICATION--Fuding County, Fujian Province, has done well in diversifying its economy by developing various kinds of sideline production. This year the amount of tea procurement exceeds 40,000 dan, showing a 10 percent rise compared with last year's record. The number of long-hair rabbits has increased from last year's 600,000 head to this year's 800,000. From last January to September, the county purchased some 65,000 jin of rabbit hair from commune members. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 31 Oct 81 OW]

SANMING PREFECTURE DIVERSIFIED ECONOMY--Sanming prefecture in Fujian Province has scored gratifying results in developing a diversified economy. Compared with last year, the output of tobacco, rapeseed, peanuts, tangerines, water melon, mushrooms and other crops this year has increased by 30 to 60 percent. The output of soybean is expected to reach 20 million jin this year and the number of hogs in the prefecture exceeds 710,000. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 30 Oct 81 OW]

ROSIN OUTPUT--This year a tremendous increase has taken place over the same period last year in pine resin purchases and rosin production in Fujian Province. Statistics as of 31 August show purchase of more than 47,600 tons of pine resin throughout the province, an increase of more than 7,500 tons over the same period last year, and an 18 percent increase. Output of rosin was more than 39,100 tons, a more than 9,500 ton increase over the same period last year, and in increase of 32 percent. This year, all echelons of government in the province strengthened leadership in rosin production, and diligently put into effect a system of responsibility and procurement policies for pine resin production, which aroused the initiative of the broad masses of pine resin farmers. The Zhangping and Huaan pine resin plants have fulfilled plan for the entire year 3 months ahead of schedule. The pine resin plants at Wuping, Yongding, Shanghang, Liancheng, Chanding, Longyan, Yongan, Datian, Qingliu, Dehua, and Yongtai expect to fulfill the entire year's plan by the end of September. Substantial increase has also taken place in output of pine resin this year in Minghua, Jianou, and Shaowu counties. [Text] [Fuzhou FUJIAN RIBAO in Chinese 30 Sep 81 p 1] 9432

RAPESEED PROCUREMENT--In order to make full use of the province's advantages in rape production, and to arouse the masses to plant rape and sell rapeseed to the state, the Provincial People's Government recently issued a notice readjusting award purchase standards for procurement of rapeseeds, effective 1 October. The notice stipulated that whatever the quota (i.e. the uniform procurement base figure), for standard or sub-standard rapeseeds the following will apply. For each 100 jin of rapeseeds meeting standards procured by the state, award sales of 100 jin of unprocessed food grains and 20 jin of chemical fertilizer would be offered. This would be an increase of 50 jin of unprocessed food grain over prevailing award sales methods. Award sales for sub-standard rapeseed oil would be decided on the basis of quality. [Text] [Article by Huang Ting [7806 2185], Provincial Agricultural Commission] [Fuzhou FUJIAN RIBAO in Chinese 30 Sep 81 p 1] 9432

CSO: 4007/47

INCREASED IMPORTANCE OF SIDELINE PRODUCTION CITED

Guangzhou NANFANG RIBAO in Chinese 30 Sep 81 p 1

[Article: Guangdong Province's Economic Structure Gradually Becoming Rational; Readjustment and Implementation of Special Policies and Flexible Measures Used in Combination"]

[Excerpts] Agricultural Byproducts Production Develops; Commune Members Earnings from Sideline Occupations Increase

A change has also taken place in the structure of agriculture. While maintaining steady increases in grain output, the ratio of sideline occupation production is constantly on the rise. Output value of sideline occupation as a proportion of the total output value of agriculture was 12.98 percent in 1979; climbed to 13.69 percent in 1980; and is forecast this year at about 15 percent. This shows a steady increase in the ratio of earnings from sideline occupations in agricultural earnings. A survey of 580 commune member households done in 1908 shows per capita earnings from sideline occupations as a ratio of total earnings to have been 27.05 percent in 1979, climbing to 28.24 percent last year, and forecast for continued increase this year.

9432
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FURTHER SPREAD OF SYSTEM OF RESPONSIBILITY FOR WHEAT GROWING REPORTED

Shijiazhuang HEBEI RIBAO in Chinese 28 Aug 81 p 1

[Article: "Shijiazhuang Prefecture Actively Spreads System of Responsibility Linked to Wheat Output; Eliminates Leftist Influence; Diligently Summarizes Experiences; Earnestly Strengthens Leadership"]

[Text] Shijiazhuang Prefecture has gained fairly apparent results from its diligent summarization of experiences, emancipation of the mentality, and active promotion of a system of responsibility linked to output of wheat. At the present time, more than 17,200 production teams throughout the prefecture, or 59 percent of production teams in the prefecture engaged in wheat farming, are putting into effect a system of responsibility whereby calculation of rewards is linked to output.

Around wheat planting time last fall, the number of production teams in which a system of responsibility linking calculation of remuneration to output had been put into effect numberd 13,211 or 47 percent of all teams. Because leftist influence had not been eradicated and the problem of ideological understanding not well solved, and since many of the systems of responsibility linked to output had not been adopted until after the wheat was planted, some methods were not perfected, and practical guidance could not keep pace, so that by the time of the wheat harvest, only 4,320 production teams remained in the system. In order to summarize the lessons of experience, the principal leadership comrades in the Prefecture CCP Committee and in government administrative offices personally took in hand six representative examples. In each county, the head and his assistants, the secretary in charge of agriculture, and the rural village work department chief took in hand 163 representative examples. At the end of June and in early July, another prefecture meeting was held for the exchange of experiences with the system of responsibility linking calculation of remuneration to wheat output. Comrades attending the meeting factually criticized leftist errors, further emancipated mentality, and unified understanding. Experience has made everyone realize thta institution of a system of responsibility linking calculation of remuneration to output is a major policy for the promotion of tremendous increases in wheat output. This year, the system of responsibility linking calculation of remuneration to wheat output took two main forms as follows: One was unified administration in a linking of output to labor. Most systems were of this kind. The other kind was unified administration with contracting for work with individual households or with individual households. No matter the form, all resulted in remarkable increases in output. The Prefecture CCP Committee concerned itself directly with five sites where wheat yields per mu

increased by more than 50 percent over last year to reach all-time highs. Counties concerned themselves with 163 sites, most of which showed a 40 to 50, or 50 to 60 percent growth over last year. In the wake of the implementation of rewards linked to output, high wheat output teams made new breakthroughs in their output. After low output teams implemented the system, increases in output increased greatly. Those teams that put into effect the linking of remuneration to output for 2 years in a row, showed advances in both years. Those who put the system into effect before planting their wheat also realized striking increases in output as compared with those who instituted the system after planting their wheat. The main reason that implementation of a system of responsibility linking calculation of remuneration to output was able to greatly increase output was the full tapping of potential for increased output of each production link. First, it increased the quality of manure collections, solving the problem of many years standing in the "loess moving away." Second, the fields were leveled carefully. Ridges left in the soil by maching plowing, and the areas all around the edges of the fields, were spaded deeply smoothed, and planted closely. Third a problem of many years standing of a lack of seedlings and not getting a full stand of seedlings was solved to get a full stand of seedlings. Forth was that weeding and hoeing was done conscientiously. Fifth, watering was done on time and evenly. Sicth, fertilizing was done scientifically, spread carefully, and worked into the soil well so that it would not be washed away. Seventh was arousal of enthusiasm for investment of each person. The masses became exceedingly concerned about the purchase, protection, and use of machines. During the first half of the year, the prefecture purchased an additonal 36,000 farm machines of one kind or another, an all-time high. Machines purchased by a combination of commune households or by individual households alone numbered more than 13,000, an unprecedented development. Machinery on order from farm machinery departments by the collective or commune members now number 16,000 nearly half the quantity sold during the previous sever months.

As a result of the summarization of practical experiences, the broad masses of cadres and people generally realized that the linking of remuneration to wheat output was better than having no linkage, that early linking was better than late linking, and that a system fixed for several years at a time was better than changing the system from one year to another. They realized that a system of full rewards and full penalties was better tha proportional rewards and penalties, and that household harvesting and threshing was preferable to estimating output in the fields or collective harvesting and threshing. At the same time, the notion that wheatfield care procudures were simple, that not much care was required, and that there was no need for a system of responsibility was pretty well generally demolished. Also demolished was the notion that wheat outputs were not low, that there was not much potential for increasing output, and so no action was necessary. Other ideas demolished were that following the linking of output to workforce, work units would change from large to small, and that farm machines would not be easily used, so there was no desire to the system, and that threshing would pose great difficulties if done on an individual household basis, and such conventional ideas. In order to further emancipate mentality, the Prefecture CCP Committee courageously and freely spread the system of responsibility linking calculation of remuneration to wheat output so that next year's wheat production will make new breakthroughs.

On the basis of a unified understanding, each echelon strengthened leadership and did a solid job of spreading the system of responsibility linking calculation of remuneration to wheat output. Heads and assistants at all echelons of the party

and government personally showed concern, and leadership cadres in counties and communes put emphasis on 793 sites, using the experiences of selected units to promote work in entire areas. At the same time, each echelon trained mainstay cadres, counties and communes training a total of more than 200,000 people. Throughout the prefecture 5,086 cadres not engaged in production were transferred, 1,115 of whom were cadres above the level of commune secretary or bureau chief. These were sent to production teams to provide concrete help. Production teams and production brigades also convened commune member conferences, which carried forward democracy in full discussion. As a result of this work, 26,658 of the 29,180 wheat planting teams in the prefecture have made up their minds to set up a system of responsibility linked to output. This amounts to 91.4 percent of the production teams. Of the total, 17,204 production teams, or 59 percent of the total have paired people to fields in the implementation of contracts with workers or households, and in all the production teams in which a system of responsibility linked to output has been set up, work preparatory to wheat sowing is being done better than in former years.

9432
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STATE FARMS MAKE EFFORT TO SAVE WHEAT CROP

Beijing RENMIN RIBAO in Chinese 11 Oct 81 p 2

[Article by Correspondent Liu Ruiwu [0491 3843 2976]: "Staff and Workers of Heilongjiang State Farms Spare No Effort in Fight Against Disaster to Harvest Grain"]

[Text] Between mid-June and late August, some prefectures in Heilongjiang Prefecture had continuous overcast and rainy weather. Rainfall averaged from 500 to 600 millimeters, and torrential rains caused rivers to overflow their banks, washing away bridges and culverts, dams, and drainage and irrigation ditches. Large numbers of fields were inundated. An area of 24 million mu of the province's 32 million mu of cultivated land on state farms, or 75 percent of the total cultivated land area, stricken with disaster. Specifically, 12 million of the 16 million mu of wheat, which was about to be harvested was immersed in water. The Sanjiang Plain, the major grain growing area, was hardest hit. Output from more than one-third of the area was lost. The flood disaster also meant low temperatures and little sunshine for fall crops, causing delay in ripening time. Soybeans formed pods without plump beans inside; cornstalks were stunted and many stalks had no ears. Weeds grew in profusion, and some crops were unable to ripen before the advent of frost. The state farms were stricken with natural disasters of floods, waterlogging, and low temperatures such as have rarely occurred.

Late July to the end of August is the time for harvesting wheat, but the overcast and rainy weather continued without let up. Lowlying areas were like lakes, and uplands were saturated with water. Machines could not go into the fields to harvest, and harvesting by hand was extremely arduous. The broad masses of staff and workers throughout the reclamation area did not just look at the disaster and sigh, but went into action at once, using every available means to fight disaster and save the grain. From the head office to individual farms, all echelons of leadership scrambled to go into the front line of the fight against disaster to save the grain, set production measures, doing all possible to rush harvest the wheat.

Each farm adapted general methods to local situations to institute systems of responsibility for production such as contracting for specific quotas of labor, and piecework wage rates to arouse initiative among staff and workers to fight the disaster and bring in the grain. In order to be able to make use of the effectiveness of mechanization, tractors and combines were fitted with devices to prevent them from sinking into the soil. They wore "wooden shoes," or wide tracks.

Alternatively, several tractors would pull a single harvester to harvest the wheat. In low-lying fields where water had accumulated making use of machines impossible, harvesting was done by hand. On state farms throughout the country, upon hearing the bell ring summoning them to work, staff and workers, dependents, the aged, and young children would at once put on rainwear, take some dry food, and brave the rains to rush harvest the wheat.

The entire reclamation area fielded 240,000 people, and Liberation Army forces stationed in the area also came forward to help, everyone, a sickle in his hand, scooping the wheat from the water. Because the continuous rainy and overcast weather allowed no drying of the harvested wheat, it was taken to every office and every household where it was spread to dry on office tables, kang's, and brick and tile kilns so as to reduce losses as much as possible. Thanks to the efforts of staff and employees throughout the reclamation areas and the assistance of the Liberation Army, by 20 September, all the wheat that could be harvested was harvested, and 2 billion jin of threshed wheat was put in storage.

Now staff and workers throughout the reclamation areas are intensifying field management in an effort to increase earnings and conserve on expenditures, and to open avenues of production in an effort to reduce losses from the disaster.

9432
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FUTURE OF WHEAT PRODUCTION IN HUBEI REVIEWED

Wuhan HUBEI RIBAO in Chinese 21 Sep 81 p 2

[Article by Provincial Academy of Agricultural Sciences: "Stabilize Acreages; Make Appropriate Readjustments; Farm Scientifically; and Center Efforts on Per Unit Yields--A Discussion of Views on the Orientation of Development of Hubei Province's Wheat Production"]

[Text] Editor's Note: In this article, the Provincial Academy of Agricultural Sciences has expounded on the future orientation of development of Hubei Province's wheat production in which there is both an extremely large amount of potential for increased output to be tapped, and the possibility of stepping up the speed of development. To read it is to receive inspiration and to have one's confidence increased. The time of autumn sowing, which marks the beginning of the agricultural production year, is nearing, and it is hoped that each jurisdiction will consider the suggestions put forward in this article, relate them to their own local realities, and study and put them into effect during this year's autumn sowing. Examples are how to further readjust the crop rotation sequence of various autumn sown crops in a combination of use and nurture of the soil; how to decide the area to be sown to wheat this year; how to put into effect and further perfect the system of responsibility for production; and how to adapt general methods to local situations in the use of various measures for increased outputs. For all these things, well-conceived, overall arrangements must be made, both with the needs of the coming year in mind and with a grounding in the present. Only in this way is it possible to seize the initiative in guiding production, and to mobilize and organize the masses to really improve the autumn sowing of wheat and other crops in order to make a contribution to the winning of a bumper increase in grain output for the whole province next year.

Wheat is one of the major grain crops of Hubei Province. The area sown to wheat throughout the province totals about 16 million mu in most years, but during the past 2 years, this area has been expanded to 19 million mu. Total output amounts to more than 75 percent of output for all summer grain crops, or about 15 percent of total grain output for the entire year. For the past 3 years, wheat has occupied a major position as a proportion of the province's total grain production. Statistics show an increase in ouput of 2.2 billion jin in 1979, with wheat accounting for

650 million jin. In 1979, increase in output amounted to 2.5 billion jin, with wheat accounting for 1.1 billion jin. In 1980, because natural disasters cut the harvest by 6.26 billion jin, wheat accounted for only 340 million jin. This shows wheat output to be fairly stable, and possessing a major role in promoting increases in total grain output for the province.

In order to speed up expansion of grain output in the province, we believe it is necessary to stabilize wheat acreage, make appropriate readjustments, farm scientifically, and center efforts on per unit yields. Moreover, the requirement that per unit yields reach 400 jin within a short period of time is attainable.

First of all, let us take a look at the speed of expansion of wheat production for the entire province. In 1975, yields broke an average 200 jin per mu, taking 26 years to do so. By 1979, after only 4 years, yields rose to an average 301 jin per mu. This shows that with steady increase in the level of scientific farming, increases in wheat yields can be speeded up. On the basis of this analysis, within 5 or 6 years, Hubei Province can look forward to yields of 400 jin per mu. Secondly, in seven of the province's counties and municipalities, wheat yields reached more than 400 jin per mu in 1979. Of these, Xiangfan City's suburbs, with somewhat more than 10,000 mu of wheat, had yields of more than 800 jin per mu. The reality of low yields becoming moderate yields, and moderate yields becoming high yields over a wide area demonstrates a very great potential for increased output of wheat in Hubei Province. Third, the wheat varieties currently being promoted for sowing throughout the province can mostly achieve yields of from 500 to 600 jin per mu, and some can produce even more; however, average yields per unit of area are currently only half that. Furthermore, in Hubei Province the major stage for formation of the organs of wheat, i.e. the jointing and flowering stages, is about 50 days, 10 days more than in the northern winter wheat region. This favors differentiation of the florets and formation of more grains. Therefore, all that is necessary is to fully use this favorable condition in the province, and to satisfy wheat's individual growth and development needs, and chances are very good for the realization of still further increases over present levels in wheat yields

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Expansion in wheat production requires keeping the overall situation in view. Autumn sowing is the beginning of the agricultural production year. Crop patterns at this time not only have a bearing on the summer harvest, but also affect the harvest for the entire year. Hubei Province's ability to increase production during the past several years has depended primarily on increases in per unit yields and an expansion of the acreage. However, looked at in overall terms, expansion of the wheat acreage has inevitably meant a contraction in the area sown to barley, broad beans, and winter-sown green manure. Thus, the proportion of wheat cropping on cottonfields following the cotton harvest increased, causing a decline in cottonfield fertility, directly impairing consistent and high yields of cotton in the following year. Therefore, decisions about the area to be planted to wheat must be arrived at through consideration of the production pattern for the entire year, helping both use and nurture of the soil. It is necessary, as well, to consider its economic benefits to achieve increased output season after season and a bumper harvest for the year as a whole. As to whether or not the wheat growing area of a county, a commune, or a brigade should be expanded or contracted, decision must be based on realities

in the local area. In some places where hilly and mountainous soils are fairly infertile, per unit yields not high, and increased planting bringing only thin harvests, appropriate increase in winter sowing of green manure might be done with a cut back in the area sown to wheat, waiting until soil fertility has been improved before again gradually reviving the wheat growing area. In wetland prefectures where intermediate rice predominates, the ridged fields, cold waterlogged fields, and winter-flooded fields, where wheat has not be grown heretofore, may, following improvement, be used for appropriate increase in the wheat growing area. In the mountainous region of western Hubei, the two crop system of wheat and corn intercropping can be expanded. In short, in every prefecture, the main orientation for increased wheat yields must be primarily increases in yields per unit of area. Looked at in terms of the entire province, the wheat growing area should be stabilized at around 18 million mu. In the summer grain production structure, there should be a restoration of some of the broad bean and barley growing area. In the history of wheat production in the province, lack of consistency in per unit yields from year to year, and lack of balance in yields from one area to another has been very pronounced. In 20 of the 30 years since Liberation, total output and per unit yields of wheat for the province have declined over the previous year. Last year average wheat yields per unit of area were lower than the province's average per unit yields of 273 jin. In 48 counties and municipalities, the area was 9.24 million mu, one half the total wheat growing area in the province. In 18 of these counties, per unit yields were less than 200 jin on an area of more than 2.4 million mu. The greatest difference in per unit yields from one prefecture to another was 191 jin. The external environmental condition accounting for this inconsistency and imbalance was infertile soil and a lack of fertilizer, too much rain in the spring and drought during the fall and winter. Consequently, in order to get balanced increases in output of wheat over large areas, it is necessary to continue capital construction of farmland water conservancy, efforts to improve conditions of production centering on soil, fertilizer, and water, improving low yield fields, and expanding high yield fields.

In terms of the eight prefectures in Hubei Province, emphasis should go to Jingzhou and Xiangyang prefectures, because both the wheat growing area and total output from these two prefectures amounts to almost half of that for the entire province. These are the province's major commodity wheat production bases. In Xiangyang Prefecture, climatic conditions are suitable for the growing of wheat and the masses have experience in growing it. In Jingzhou Prefecture, the potential for increased wheat output is great. Therefore, rapid increase in per unit yields of wheat in these two prefectures and increase in total output is not only necessary, but also possible. In addition, this would play a role in guiding and promoting wheat production in other prefectures. For this purpose, plans have to be made for leadership, materials and technology for wheat production in these two prefectures, and there has to be step by step assistance and guidance given to get three-fifths or two-thirds of wheat production for the entire province from these two prefectures.

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Wheat output is composed of the three factors of number of spikes per unit of area, number of grains per spike, and per thousand weight of grains. Experience has demonstrated that for the same place during the same year, whether yields are high or low will be determined primarily by the number of spikes per mu and the number of grains per spike, grain weight showing no great variation. Changes in yields in the

same area during different years are related in most cases to the per thousand weight of grains. Consequently it is said that the number of spikes is the main element in high yields, and the per thousand weight of grains is a major condition for consistent yields. The situation in Hubei Province at the moment is a general lack of an adequate number of spikes in production over wide areas, there being generally only from 120,000 to 180,000, and sometimes less than 100,000. Figuring the harvest of 1 jin for every 500 to 600 spikes in most years, with an increase of between 50,000 and 60,000 spikes per mu, yields could be increased 100 jin. As regards the extent of change in per thousand weight of grains, in Hubei Province there is a difference some years of about 10 grams. On the basis of the foregoing, the crux of increases in wheat yields per unit of area lies first of all in using every available means to increase the number of panicles and the number of grains per panicle, after which the per thousand weight of grains can be stabilized.

In order to achieve these things, it is necessary, first of all, to make sure of growing a full stand of wheat. Second is a need for rational fertilization. Third is the need for work to prevent flooding and to prevent diseases and insect pests. For large area production, lack of a sufficient number of wheat seedlings is the direct reason for an inadequate number of spikes. In most prefectures the number of basic seedlings is only 120,000 to 150,000 per mu, and sometimes less than 100,000. Furthermore, a general situation exists of missing seedlings and cracking of soil around seedlings over between 10 and 20 percent of the area. As a result of fertilizer and water conditions and the careless planting and care of wheat, the tillering and heading rate is not high, usually only 10 to 20 percent, and in some cases each seedling forms only a single spike. Consequently, suitable increase in the number of basic seedlings and reliance on main stems to form spikes are major means for increasing per unit yields. In addition, in most years, Hubei Province has about 3 million seedlings that come up too late and more than 1 million seedlings that grow too early. This has a great influence on increases in per unit yields. Therefore, attention to planting at the right times, and assuring between 150,000 and 220,000 basic seedlings per mu depending on the previous crop planted on the same soil and different levels of soil fertility are the foundation for bumper output. Another point is that for the past 30 years, Hubei Province has had fall and winter drought once every 6 years and fall waterlogging once every 7 years. Efforts to increase the quality of leveling of the land, attention to preservation of moisture, and a fight against drought to protect the seedlings or to prevent waterlogging through draining away of stagnant water, and every effort to reduce or prevent the rotting of roots or seeds are important links in prompt emergence of seedlings and for a full stand of wheat.

In about 60 percent of the wheat growing area of Hubei Province, seeds that will not germinate are planted or not enough fertilizer is applied. During the past several years, the province has promoted widely the application of fertilizer for tillering, for jointing, and spraying of fertilizer on leaves, which have played a very great role in increasing wheat yields. Last year, fertilizer for jointing was applied to more than 13 million mu of wheatfields throughout the province, for an average increase in yields of from 70 to 80 jin per mu. Through this measure alone, wheat output for the province was increased by from 900 million to 1.1 billion jin. Therefore, if bumper increases in wheat harvests are to be realized, in addition to applying sufficient base fertilizer, continuation of attention to these three applications of fertilizer will be very necessary.

In most prefectures of Hubei Province, quantity of rainfall during the wheat growing season most years is more than 500 millimeters, half of it being concentrated during April and May. This is greatly in excess of wheat's physiological needs. The excessive amount of soil moisture leads to rotting damage, and when there is rotting, dieases and insect pests proliferate, plants deteriorate early, or lodge, or burst and die in a quite common situation. In places along rivers and lakeshores, in particular, failure to separate drainage and irrigation facilities means that when dry spells and wet spells follow each other, quite naturally flooded areas may surround drought stricken ones. If such places are to get consistently high yields, they will have to continue capital construction of farmland water conservancy so that they will be able to irrigate during drought and drain during waterlogging, particularly to get rid of waterlogging damage. In this regard, Longping Commune in Guangji County has provided a reliable experience. This commune has largely adopted the digging of deep ditches, the opening of a large port, construction of dikes, and the building of terraced fields within which four ditches have been opened to reduce the underground water, to drain away the ground water and surface water, thereby greatly reducing rot damage and diseases of wheat to transform the "water pocket" and "cereal scab cesspool" low yields situation to a situation of bumper wheat harvests year after year.

Cereal scab, powdery mildew, rust, armyworms, and aphids are the principal wheat diseases in Hubei Province. They develop and spread in varying degrees every year. For the prevention and control of different diseases and insect pest, scientific research and production units have long since had test results in methods of using pesticides, so this is no new technology. The key is changing the past practice in many places of not using pesticides. Production leadership departments have to bolster propaganda and guidance, and supply and marketing departments have to organize supply in a planned way. At the same time it is necessary to do as Guangji County did in the prevention and control of cereal scab of wheat by doing sensible planting, and using superior varieties and pesticides in combination for comprehensive prevention and control.

9432
CSO: 4007/41

LINKING PLANNED OUTPUT TO REMUNERATION EXTOLLED

Wuhan HUBEI RIBAO in Chinese 21 Sep 81 p 1

[Article by Tian Xiangwen [3944 6763 2429]: "New Development of System of Responsibility Linking Calculation of Remuneration to Production in Hubei's Rural Villages; Production Teams That Have Put Into Effect Calculation of Remuneration Linked to Production Total 66.8 Percent; Those Practicing Unified Administration Linking Production to Workers Total 36.9 Percent]

[Text] The system of responsibility linking calculation of remuneration to agricultural production in Hubei Province has been steadily consolidated, prefected, and has seen very great development during the past year.

Ever since the transmission to lower levels of the Central Committee documents on strengthening and perfecting the system of responsibility for production, all echelons of CCP committees in the rural villages of Hubei Province have enhanced leadership and have diligently cleared away "leftist" ideological influences, handling matters in accordance with laws that require that production relationships meet requirements for development of productivity so that various kinds of a system of responsibility linking calculation of remuneration to output develop from application to industrial sideline occupations to agricultural production, develop from application to non-staple crops to staple crops, develop from application to drylands to wetlands, and develop from contracts for 1 year to several years guaranteed without change. As compared with the end of last year, systems of responsibility unlinked to output throughout the province have been on the decline. They declined from 71 percent to 33 percent of the total number of production teams. Systems of responsibility linked to production increased, going from 29 percent to 116.8 percent of all production teams. Within the various systems of responsibility linked to production, implementation of specialized contracting and linking of output to workers or to households has steadily increased, while those linking production to teams have decreased. Increasing fairly rapidly has been unified administration with output linked to workers. Production teams putting into effect this kind of a system of responsibility rose from 5.6 percent of the total number of production teams in 1980 to 36.9 percent. Meanwhile the form of a system of responsibility whereby contracting for work or contracting for production is done with individual households has also developed in some places, with large scale contracting for work employing "several uniformities" has been most common.

Systems of responsibility linkined to output effectively make the most of the superiority of the collective economy and fully arouse the initiative of individual commune members. They promote development of production, lower production costs, increase the quantity of goods, and improve the peasants' livelihood. Some units with a fairly good economic foundation have moved production upward by yet another notch, and some long enduring "three dependency production teams" have freed themselves in a year's time. When grassroots level cadres in Jianning County summarized changes since the institution of the system of responsibility linked to production, each of them was visibly pleased. They said that now rural villages have eight things: granaries have grain; pots have rice in them; jars have oil in them; coops have chickens in them; pens have pigs in them; ponds have fish in them; private plots have vegetables in them; and purses have money in them. A look at the ground, and one sees that both agriculture and sideline occupations are moving ahead together, and there are bumper harvests in grain. A look at people's faces, and one sees they are glowing with health and wreathed in smiles; a look at the markets and one sees prosperity, both buying and selling booming.

Right now all echelons of leadership are in process of summarizing the systems of responsibility for agricultural production, deciding the form of future systems of responsibility for production, and spurring on present field care and autumn sowing and production in order to realize increased output and increased earnings from agriculture this year, and to win an even greater bumper harvest in agricultural production next year.

9432
CSO: 4007/44

BRIEFS

CATTLE BREEDING DIRECTIVE--The Hubei Provincial People's Government recently published a directive urging all areas in the province to develop cattle breeding. The directive demanded that all areas strengthen the implementation of the production responsibility system of fodder management and encourage the commune members and staff and workers to develop domestic cattle breeding. It is necessary to make full use of grassland and pastures and build strong animal husbandry teams. It is necessary to ensure procurement of cattle and beef at reasonable prices. [HK160859 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 29 Sep 81]

CSO: 4007/64

BRIEFS

COMMODITY GRAIN BASES--According to information provided by the Hunan Provincial Agricultural Bureau, the Dongting Lake District has been developed greatly by the party and the government since liberation and consists of 17 counties and municipalities with a total arable area of 12.7 million mu. Drainage has been improved and river embankments have been reinforced; some 6,100 kilometers of high voltage cables have been installed and 90 power stations have been built. At present, the installed capacity of the power stations in the district totals 360,000 kilowatts. Electricity supply is now available in over 95 percent of the communes and 50 percent of the brigades, and most of the communes and brigades have put scientific farming into practice. The total agricultural output in 1980 increased by over 500 percent compared with 1950, and 1,712 billion jin of commodity grain was turned over to the state in 1980, accounting for 22.6 percent of the total amounts of commodity grain submitted. [HK160933 Changsha Hunan Provincial Service in Mandarin 1100 GMT 27 Sep 81]

LUMBERING CIRCULAR--In view of the severe situation of indiscriminate lumbering in Hunan Province, the Hunan Provincial CCP Committee and Provincial People's Government recently issued an urgent circular urging all areas to adopt measures to curb indiscriminate lumbering. The circular pointed out: indiscriminate lumbering hampers the fulfillment of the state's timber production quotas, hinders the building of the four modernizations and affects the ecological balance. Party committees and governments at all levels must change the state of being lax and weak, they must strengthen leadership and enhance the people's understanding of the significance of protecting the forests. They must also take effective measures to curb indiscriminate lumbering. [HK160859 Changsha Hunan Provincial Service in Mandarin 2300 GMT 28 Sep 81]

CSO: 4007/64

ANNUAL FRESHWATER FISH OUTPUT OF MAJOR PRODUCING COUNTIES GIVEN

Nanjing XINHUA RIBAO in Chinese 25 Sep 81 p 2

[Article: "Eight Counties in Jiangsu Province Have Annual Freshwater Fish Outputs of More Than 5,000 Tons"]

[Text] Throughout the country, 27 counties and municipalities have annual outputs of more than 5,000 tons. In Jiangsu Province, the eight counties are: Wuxian, Hongze, Xinghua, Wujiang, Gaoyou, Wuxi, Wujin, and Kunshan, of which Wuxian and Hongze have annual outputs of more than 10,000 tons.

Recent survey statistics from the State Aquatic Products Bureau show that the number of counties and municipalities in which annual output of freshwater fish will exceed 5,000 tons will increase from last year's 27 to around 35.

On the basis of State Aquatic Products Bureau requirements, counties with a freshwater fish output of more than 3,000 tons are fishing industry key counties. Last year such counties and municipalities numbered nearly 80. Of this number, those exceeding 5,000 tons included 27 counties and municipalities located in seven provinces, namely Wuxian, Hongze, Xinghua, Wujiang, Gaoyou, Wuxi, Wujin, and Kunshan in Jiangsu Province; Hengyang, Qidong, Yuanjiang, Shaodong, Qiyang, and Hengnan in Hunan Province; Shunde, Nanhai, Zhongshan, Dongguan, and Xinhui in Guangdong Province; Hongshan District in Wuhan City, Honghu, Xishui, and Yangxin in Hubei Province; Huzhou City and Yuhang in Zhejiang Province; Boyang in Jiangxi Province; and Weishan in Shandong Province. In Wuxian, Hongze, Weishan, Huzhou, and Hongshan District in Wuhan City, annual freshwater fish output exceeded 10,000 tons. In Nanhai, Zhongshan, and Shunde counties, annual output was more than 20,000 tons.

Water surfaces for the raising of freshwater fish in these 27 counties and municipalities total 2.65 million mu, which is 6 percent of the total freshwater fish raising area in the country. Freshwater fish output totaled 278,800 tons, which was 22.5 percent of last year's total national freshwater fish output. Common characteristics of these counties and municipalities are as follows: possession of a fairly large amount of water surfaces; considerable attention to the fishing industry on the part of their leaders; organizations and personnel specialized in management of the fishing industry; consistent administrative authority over water surfaces; further implementation of a system of responsibility for fishery industry production; gradual development of scientific fish raising; and fairly abundant mass experience in production. Except for individual counties where output has dropped slightly as

a result of disasters, an overwhelming majority of the fishing industries in these 27 counties and municipalities increased output in varying degrees this year, the extent of increased output ranging from 3 to 10 percent.

The State Aquatic Products Bureau believes that there are more counties where water surface resources are abundant and where the potential for development is very great. If leaders will only give serious attention, diligently carry into effect pertinent programs and policies of the party, and adopt effective measures, with effort, output from China's freshwater fishing industry is entirely capable of attaining new levels within a fairly short period of time.

9432
CSO: 4007/47

BRIEFS

GANYU COUNTY PEANUT HARVEST--Ganyu County in Jiangsu has reaped a bumper harvest of peanuts on its 180,000 mu of land with total output exceeding 65 million jin. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 30 Oct 81 OW]

SIHONG COUNTY GRAIN OUTPUT--Sihong County, Jiangsu Province has reaped a bumper harvest of grain and peanuts this year. The total grain output reaches 630 million jin, an increase of 130 million jin over 1980. The total output of peanuts reaches 80 million jin, increasing by 70 million jin over 1980. The total amount of grains and peanuts turned over to the state reaches some 140 million jin, and the average per capita income is expected to reach over 100 yuan, an increase of some 60 yuan over 1980. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 26 Oct 81 OW]

CSO: 4007/64

BRIEFS

OIL PROCUREMENT--Boyang, Gaoan, Duchang, Dongxiang, Yongxiu, Xinyu, Yichun, Jiujiang, Fengcheng and Ruichang Counties in Jiangxi Province have procured some 17 million jin of oil and fat as of 20 October with more than 1 million jin of oil and fat procured in each county. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 30 Oct 81 OW]

CSO: 4007/64

INFORMATION FOR FALL HARVESTING, SOWING GIVEN

Xi'an SHAANXI RIBAO in Chinese 19 Sep 81 p 1

[Article by Research Institute, Provincial Academy of Agricultural Sciences: "Use Every Possible Means to promote Early Ripening of Fall Crop, and Adapt General Methods to Local Situations to Take In Hand Fall Sowing; Scientists and Technicians of the Provincial Academy of Agricultural and Forest Sciences Informally Discuss Problems in Autumn Harvesting and Sowing"]

[Text] On 9 September, the Provincial Academy of Agricultural and Forest Sciences convened a seminar of scientists and techniciana to discuss how to triumph over the overcast and rainy weather, and take care of the autumn fields to promote early ripening, reduce losses, and do a good job of fall sowing. They made the following suggestions.

Spring corn. The kernels of the early corn crop (in fields interplanted with rape and wheat), and of the seed corn, are now entering the waxy ripening stage. It is necessary to win out over overcast and rainy days and take advantage of fine days to harvest and dry it so as to prevent mildewing and rotting, to guarantee the harvest and seeds for next year's use.

The corn that was planted following the wheat harvest in mid-June has now come into milk. In order to improve ventilation and penetration of light, change the growing environment, and promote development, the following measures should be taken by adapting general methods to local situations to promote early ripening: 1) Removal of suckers. Pulling up the corn plants that have not formed sturdy stalks for green feeding of livestock. Removing old leaves. Taking off the old, yellow, and dry leaves beneath the ears. 3) Stripping off the husk during the wax ripening stage. When the kernels harden, the outer husk should be stripped from the ears so that they get sunlight and dissipate moisture. 4) Topping. After the wax ripening stage when the husks have turned yellow, cut off the tops of the stalks at the second leaf up from the ear and use it for green feed, thereby increasing sunning time to promote dissipation of moisture.

With regard to the late corn crop of medium and late maturing varieties like Zhongdan No 2 and Huangbaidanjiao, which were sown late or planted late, in fields where pollinization and fruiting has not yet occurred owing to rainy weather, or where there is no hope of ripening taking place, the stalks may be cut for use as ensilage or used as green feed in order to get an early start on turning under the soil, applying fertilizer, and making the fields ready for on-time planting of wheat or use as seedling beds for rape.

Take firmly in hand cottonfield management. Right now the important things to do in cotton field management are to prevent and control insect pests, to prune the plants, to reduce humidity and increase warmth, and to rush harvest overripe bolls, drying them promptly. Overcast and rainy days have been numerous this year, causing serious damage from Anomis flava Fabr, and in some cotton fields the top leaves have been virtually eaten bare. Once the weather clears, 200 to 250 parts of 223 emulsion or 250 to 300 parts of equal parts of wettable 6 percent 666 and 223 emulsion may be sprayed for treatment. Recently Boshi Commune in Dali County had very good results from the use of dichlorvous mixed into soil (2 liang of dichlorvous plus a small amount of water sprayed on 50 jin of dry pulverized soil) and evenly spread for prevention and control. All places can promote this. Survey shows that in most cottonfields at the present time, each cotton plant has ab about three overripe bolls, and in serious cases four or five and more. Once the weather clears a little, a combination of exposing the plants to light and facilitating aeration by pushing two adjacent rows toward each other for a few days and then away from each other for a few days, and picking of moldy bolls and drying them promptly may be used to decrease losses. Old leaves should be removed and empty stems cut off to promote ventilation and penetration of light, to reduce humidity and increase warmth in order to promote early ripening. If rainy and overcast weather continues following ripening of the cotton, heating kangs and drying rooms should be readied for drying and toasting. Management of the kangs and drying rooms should be the responsibility of designated people, and strict precautions taken to prevent fires.

Intensification of care of autumn vegetables such as radishes and Chinese cabbage, expansion of the planting of overwintering vegetables, and increased plantings of quick-growing vegetables.

Quick action to sow dryland rape, and to expand the transplanting area in irrigated places. The overcast and rainy weather has already delayed by 10 days to half a month the sowing of dryland rape. Strict attention should be given quick sowing, using varieties such as Shangdang rape to replace Guanyou system varieties. In planting, plow a furrow in a hard stubble field and dribble the seeds into it. Width of rows should be 3-4 cun, and rows should be 1.2 chi apart. Apply seed fertilizer and increase density of seedlings retained. Increasing density of retained seedlings of dryland rape can effectively control virus diseases of rape, favoring increased yields.

Adapt general methods to local situations in planting sufficient wheat well. According to a farmer's saying, "When wheat is planted in the mud, there will be steamed bread to eat in the coming year." This as well as analysis of numerous years of meteorological data shows that in years when rainfall is more than 200 millimeters before the wheat is planted, the wheat crop the following year will be bumper. This year has brought a lot of rain and soil moisture is ample, providing adequate moisture conditions for the growth of wheat. Therefore, every effort should be made to increase the area sown to wheat. Because wheat requires "wealth while developing," and since autumn downpours may result in organic fertilizer not getting into plants, or deeply plowed rows having large mud clumps, a single application of nitrogenous fertilizer prior to sowing should be promoted as a method to be used. Experiments conducted for many years at many sites by the Provincial Mud Fertilizer Institute as well as large areas demonstrations have shown that in

wetlands and drylands alike, this method of fertilization saves labor, reduces fertilizer waste, and increases yields as compared with the method of periodic fertilization. Single deep fertilization with ammonium carbonate and urea increased wheat yields by from 20 to 30 percent as compared with several topdressings of fertilizer during the development period. This year when overcast and rainy weather has delayed the sowing season, should it not be possible to apply organic fertilizer, the deep application method in advance of sowing is even more essential.

In order that wheat can be grown during the high yield period, the wetland late corn crop can be harvested ahead of time during the final part of the waxy ripe stage, the stalks and roots removed, and the soil turned under. Since there has been a lot of rain and soil moisture is plentiful, there is no need to stress deep plowing. The best method is to use a rotary tiller to prepare the land to reduce the number of mud lumps formed and pulverize the soil plots. Depending on the situation, in planting seeds either a drill may be used to form a furrow into which the seeds are dribbled, or a furrow may be made with a hoe. At the same time, an application of seed fertilizer should be made to intensify care prior to overwintering.

9432
CSC: 4007/45

ALL-TIME HIGH OUTPUT OF TEA REPORTED

Kunming YUNNAN RIBAO in Chinese 12 Sep 81 p 1

[Article by Su Fanghua [5685 5364 5478]: "Summer Tea Procurement Throughout the Province Reaches an All-Time High"]

[Text] Following continued increase in spring tea output, a bumper tea yields has been harvested for the summer in Yunnan Province. As of 20 August, a total of somewhat more than 268,000 dan of unfired tea leaf had been purchased by the state in fulfillment of 82 percent of annual plan, a 7.5 percent increase over the same period last year. Of the total, the quantity of summer tea purchased was somewhat more than 140,000 dan, summer tea surpassing the quantity of spring tea and setting an all-time high. Of the provinces 23 major tea producing counties, Lancang County has exceeded quota by 5.8 percent 4 1/2 months ahead of schedule to fulfill annual plan for purchase of 5,000 dan of tea. The five counties of Fengqing, Yunxian, Yongde, Shuangjiang, and Changning have already fulfilled more than 90 percent of annual plan. Quality of unfired tea leaf purchased has also been greatly improved over the same period last year. In Lincang Prefecture, which produces mostly black tea, the average price for each dan of unfired red tea leaf increased 16.94 yuan over the same period last year. In Jinggu County, which mostly produces green teas, the average price per dan of unfired green tea increased 24.74 yuan over the same period last year.

Currently the major tea producing areas are enhancing management of tea plantations, hastening improvements in low yield tea plantations, and devoting themselves to collection and processing of the autumn tea, striving to win an even greater tea harvest for the entire year.

9432
CSO: 4007/40

BRIEFS

GRAIN PURCHASE MEETING--Yunnan Province recently held a provincial meeting of directors of grain departments to seriously study and discuss the notice of the Provincial CCP committee and the Provincial People's Government that the policy for grain purchase will remain unchanged for another 5 years. The meeting held: the Provincial CCP committee and People's Government are correct in publishing this notice. The unchanged grain purchase policy will definitely encourage the masses and arouse their enthusiasm in increasing grain production. The grain departments must seriously implement the spirit of the notice and strive to do a good job of grain procurement. In conclusion, the participants put forth three measures to implement the notice: 1) organize groups to go to the rural areas to popularize the notice and the policy and to arouse the enthusiasm of the cadres and masses to implement the notice; 2) practically implement the procurement quotas which will remain unchanged for another 5 years; 3) actively launch purchase at negotiated prices. Grain departments must overcome difficulties and strive to procure the surplus grain offered by the masses. [HK160949 Kunming Yunnan Provincial Service in Mandarin 1100 GMT 28 Sep 81]

CSO: 4007/64

QUESTIONS ON RURAL ECONOMIC PRACTICES CLARIFIED

Hangzhou ZHEJIANG RIBAO in Chinese 15 Sep 81 p 2

[Article: "Answers to Rural Economic Policy Questions"]

[Text] Editor's Note: We have received quite a few letters from readers asking what are specialized households and specialized people, what are "privately employed persons" and focal point households; what are "excelling households," and what is the contract system? We have turned to a Ningbo Prefecture farm committee comrade to answer these questions as follows.

Question: What is a specialized household and a specialized person?

Answer: Specialized households and specialized persons are a form of the "four specialties" system of responsibility. In their development of farming, forestry, animal husbandry, sideline occupations, and fisheries, production brigades and production teams have contracted with households having the expertise or with individuals production categories suited to specialized performance by individuals, things such as small quantities of economic crops that are fairly technical in nature, livestock feeding industry, and certain handicrafts. Contracts termed "special, fixed, or reward" are signed by the collective with households or individuals. By specialized contracts is meant that the contractors are to be responsible for undertaking certain production work. By fixed contract is meant fixed output, output value, cost, and workpoints (some provide only for fixed profits to be surrendered to higher authority). By reward contract is meant that excess output (or value) merits reward, and owing of output (or value) entails proportional payment of penalties.

Use of specialized households and specialized individuals is helpful in making full use of workforce resources and natural resources. It helps raise levels of science and technology and the degree of specialization. It helps development of diversification, opening new avenues for rural villages to become prosperous in the shortest possible time, and should thus be actively advocated.

Question: What is meant by "privately employed persons" and focal point households?

Answer: "Privately employed persons" are those who, following approval, devote themselves entirely to family sideline occupations. This is a method that has been put forward in view of the large workforce relative to available land, which characterizes rural villages, and that makes the most of workforce advantages to advance commune member household sideline industries. Notices from the CCP Central

Committee and the State Council have clearly pointed out that except for the busy seasons in farming, some of the underemployed and as much auxiliary labor as possible should be permitted to not engage in collective labor so as to be able to devote themselves wholeheartedly to household sideline occupations. Nowadays in commune members households in quite a few communes and brigades, some commune members are no longer engaging in collective productive labor following approval by their production teams. Instead, they are devoting themselves to running private plots and household sideline occupations such as raising hogs, chickens, ducks, rabbits, and fish, and to planting flowers and trees with very good results.

Focal point households is a term that has derived from comparison with "privately employed persons," and involves selection, following production team approval, of commune members possessing certain skills to have their households run certain family sideline occupations. The stste and the collective provide all necessary assistance in seeds or animals, livestock feed, capital, and materials, and link the relationship of the state, the collective, and the individual through a contract. Focal point households are required to participate in collective labor, except for those engaged in certain family sideline occupations. Depending on the actual situation of a production team, both "privately employed people" and focal point households may be assigned a share of responsibility for expenses of public welfare undertakings in accordance with the labor base, or they may have only small responsibility or no tesponsibility.

Question: What is an "excellent household?"

Answer: Co-mune members whose income derived from their own labor is conspicuously higher than local average income levels, and who have relied on their own strenuous work to become prosperous are called excelling households. Earnings from work are of two kinds. One is income derived from participation in collective labor. The other is income derived from developing household sideline occupations. This is fundamentally different from those who engage in speculation and opportunism, and who exploit others and transgress the welfare of the collective to gain illegal income and become wealthy. Illegal income gained from speculation and opportunism and the exploitation of others must be handled in accordance with law. Excelling households who rely on labor to become prosperous, not only cannot be looked down upon, but should be actively encouraged and supported and enjoy the protection of the law.

Question: What is the contract system?

Answer: The contract system is a kind of economic agreement, and a good method whereby economic methods are used to manage the economy. In the process of establishing systems of responsibility for production in agriculture, it is the "bond" that correctly takes care of and solves relationships among the state, the collective and individuals. No matter the form of the system of responsibility linked to production that is established, production brigades and production teams must sign contracts individually with each contracting unit, laborer, or household in order to assure that the system of responsibility linked to production in agriculture, forestry, animal husbandry, sideline occupations fisheries, industry, or commerce will be implemented and honored. Each contract usually has mutually agreed upon clauses pertaining to the means of production to be supplied to the contracting units and contractors for their use, the output, output value, quality,

time of completion (including timely surrender to brigades or communes of product earnings) expenditures, remuneration for labor (workpoints), method of providing rewards, and other necessary provisions contracted for. Following full discussion and approval by commune members, the contract is approved by both parties and a guardian unit, each of which signs it and affixes a seal. Three copies are made of each contract, each party keeping one. Once a contract has been signed, it must positively be carried out. It may not be changed at will without the agreement of all three parties. Violation of the contract resulting in losses will entail economic responsibilities.

9432
CSO: 4007/49

II. PUBLICATIONS

BRIEFS

RURAL YEARBOOK--Beijing, 31 Oct (XINHUA)--A new book for rural readers, the 1982 "Rural Yearbook." Will soon be published by the People's Publishing House. Like "East Is Red," published previously by the same publishing house, the yearbook will contain materials on politics, economics, ocience, public health, literature and art, culture as well as peasants' everyday life. In addition, it will have several new sections such as "Rural Work Study," "Rural Youth" and "Eugenics and Good Education." A lunar calendar will also be included in the book. [Beijing XINHUA Domestic Service in Chinese 0039 GMT 31 Oct 81 OW]

CSO: 4007/64

AUTHOR: WANG Yixian [3769 2034 6343]
ZHAO Mingcha [6392 0682 5420]

ORG: Both of Research Institute of Geography, Chinese Academy of Sciences

TITLE: "Spatial Distribution Characteristics of Total Radiation in a Ten-day Interval and Photosynthesis Potential in China"

SOURCE: Dalian ZIRAN ZIYUAN [NATURAL RESOURCES] in Chinese No 3, Sep 81 pp 32-41

ABSTRACT: Many scientists have studied the subject of total solar radiation distribution in China but their reports are mostly limited to the calculation and distribution characteristic of radiation in a month. These data, therefore, are difficult to satisfy the needs of scientific research and production construction. In agricultural production and experimentation, photoenergy utilization of crops during their period of growth and development and photosynthesis experiments of industrial products, etc. all require total radiation data of ten-day periods or even shorter. This paper discusses the method of computing the total radiation of ten-day periods, the concept and the method of computing photosynthesis potential, the spatial distribution of total radiation in a ten-day period and its relationship to photosynthesis potential, and the tendency of change in time of the total radiation in a ten-day period, and the regionalization theory of photosynthesis potential. Ten-day solar radiation data and the photosynthesis potential of the Northeast, the Inner Mongolia Region, the North China, the Northwest, the Eastern Region, the Region of Sichuan, Yunnan, and Guizhou, and the Qinghai-Xizang Plateau are introduced.

AUTHOR: SU Renqiong [5685 0086 8825]
LU Yazhou [7120 0068 3166]

ORG: Both of Natural Resources Comprehensive Survey Committee, Chinese Academy of Sciences

TITLE: "A Preliminary Study on Irrigation and Drainage Measures of Meadow Reclamation in Heilongjiang Province"

SOURCE: Dalian ZIRAN ZIYUAN [NATURAL RESOURCES] in Chinese No 3, Sep 81 pp 62-69

ABSTRACT: Meadow reclamation discussed in the paper includes the 4 types of lake shores, vicinity of springs, banks of large rivers and streams, and valleys of small streams. Soils of these areas are thick and highly fertile. After reclamation, cultivation, drying, and maturation, the unit yield of these lands is generally 30 percent above slope lands, and doubling in some cases. The fields are flat and the condition of water is good and the only remaining problems are drainage and irrigation. Reasons for water accumulation of these lands and proper drainage measures are discussed. With successful drainage, irrigation during arid periods becomes necessary, of course. The construction of reservoirs and/or wells are discussed and recommended.

AUTHOR: KANG Qingyu [1660 1987 4416]
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ORG: Both of Natural Resources Comprehensive Survey Committee, Chinese Academy of Sciences

TITLE: "The Experience and Lesson in Bringing Hulunbeier Grasslands Under Cultivation"

SOURCE: Dalian ZIRAN ZIYUAN [NATURAL RESOURCES] in Chinese No 3, Sep 81 pp 70-81

ABSTRACT: Hulunbeier grasslands are located in the western border of the Northeast in China, including the 2 parts of the low western foothills of Daxinganling and the Hulunbeier highland. Originally, the Eastern part is a forest meadow-chernozem zone and the Western part is a semi-arid grassland-chestnut soil zone. After 1958, especially in 1960, a large scale agricultural reclamation project was carried out in the forest border of the eastern part and in the vast highlands of the western part. By the end of 1962, 25 state-operated farms encompassing close to 3 million mu had been established and a sharp contradiction between agriculture and grazing occurred. In 1963, 76 percent of the cultivated fields (2.26 million mu) was re-abandoned to grassland. The communes devoted to animal husbandry have no grain and feed bases, however. In 1972, the 4 banners had to buy 90 million jin of grain and the transportation cost alone was 600 thousand yuan. The bitter lesson of history points out clearly that if large scale reclamation and retreat from cultivation are not carefully planned, there will be a penalty according to natural and economic laws. The paper includes recommendations for resolving the problems of the eastern and the western parts of the region respectively.

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TITLE: "Estimation of Precipitation Change Since the Large Scale Reclamation and Cultivation on the Sanjiang Plain"

SOURCE: Dalian ZIRAN ZIYUAN [NATURAL RESOURCES] in Chinese No 3, Sep 81 pp 90-96

ABSTRACT: The vast region of the Sanjiang plain of the Northeast is currently an important base of commercial grains in China. Since the middle 70's, the problem of aridity is becoming more severe every year. To date, about 1/3 of the region is under cultivation. As the marshes are drained and vegetative covers destroyed during reclamation, the area of water surface is reduced to cause the humidity to drop, the temperature differential to enlarge, the wind speed to accelerate, and wind erosion of soil to rise. This paper reports the establishment of a mathematical model for estimating the range of effect of reclamation on precipitation. The results demonstrate that the mean precipitation of Sanjiang plain before reclamation is 589.2 mm/year, and it is 536.9 mm/year after reclamation. Another calculation shows that the precipitation of the cultivated area and that of the uncultivated area of the plain are not obviously different. Analyses of historical data and the background macrometeorology indicate that in Sanjiang plain, the period of the late 70's is determined to be arid by the principle of natural change more than any other factor.

6168
CSO: 4009/46

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TITLE: "A Study on the Growth and Development of Neijiang Piglets"

SOURCE: Nanjing XUMU YU SHOUYI [ANIMAL HUSBANDRY AND VETERINARY MEDICINE] in Chinese No 4, 20 Aug 81 pp 6-8

ABSTRACT: For the purpose of promoting reasonable feeding and management of the local superior swine breed of Neijiang pigs of Sichuan Province, the growth and development of 933 piglets (511 males and 422 females) are observed under a low nutritional level of primarily green rough feed, with some processed materials, in a 10.07 : 0.6 kg mixture. From birth to 60 days of age, the piglets are weighed and measured once every 10 days, and dissected to inspect the internal organs. The chemical composition changes of the blood are also analyzed in the laboratory. The resultant data are reported.

6248
CSO: 4009/66

AUTHOR: LI Wei [2621 4850]
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TITLE: "Report of One Case of Lymphoid Leukosis of a Dairy Cow"

SOURCE: Beijing ZHONGGUO SHOUYI ZAZHI [CHINESE JOURNAL OF VETERINARY MEDICINE] in Chinese No 8, 22 Aug 81 pp 24-25

ABSTRACT: A Holland hybrid cow, aged 3½ years, of a certain dairy farm of a Guangzhou suburb suffered repeatedly from mastitis from 13 Jan 1980. She was cured after repeated treatment but her appetite worsened on 8 March; she grew thinner daily, and produced less milk; she dropped from 30 jin to 2 jin. She died on 27 Mar. Blood analysis showed 2.47 million/mm^3 red cells and 19,000/mm^3 white cells. The number of reports of lymphoid leukosis in dairy cattle is increasing every year and presents a serious threat to the development of the dairy industry and there is the question of the effect of milk products of cows with this disease on human health. Pathological and histological data of the cow and the dead fetus are included in the paper.

6248
CSO: 4009/60

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TITLE: "The Presence of Coupling Factor for Photophosphorylation from Plastids of Albino Rice Seedlings"

SOURCE: Shanghai ZHIWU SHENGLI XUEBAO [ACTA PHYTOPHYSIOLOGIA SINICA] in Chinese No 3, Aug 81 pp 209-214

TEXT OF ENGLISH ABSTRACT: It has been known that coupling factors for photophosphorylation (PSP) are already present on the membranes of plastids from etiolated plant, and that CF_1 is formed during the early stages of chloroplast development. Whether there is CF_1 in plastid membranes of albino seedlings also, however, is not known. Therefore, we performed the following experiments with pellets of albino rice seedling extract obtained by centrifugation between 600-1500 x g.
1. When EDTA extracts from plastids of albino rice seedling were subjected to polyacrylamide gel electrophoresis, there was a band at the position of CF_1.
2. It was shown that the plastids preparation from albino rice seedling had membrane-bound (Mg^{++}-Ca^{++})-activated ATPase activity.
3. The plastid membrane from albino rice plants can partially recover the PSP

[Continuation of ZHIWU SHENGLI XUEBAO No 3, Aug 81 pp 209-214]

activities of deficient membranes of thylakoids of green spinach leaves when they are mixed together.
4. To preclude the presence of mitochondria in the pellets separated between 600-1500 x g, these were examined under electron microscope together with mitochondria preparations separated between 3000-10,000 x g, as is usually done. No mitochondria were present in the former preparations.

These results indicate that the coupling factor for photophosphorylation must be present in the albino rice seedlings and, as the proplastids in albinos are relatively undeveloped, this will lend support to the view that CF_1 is formed at an early stage of chloroplast development.

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TITLE: "The Oxygen Inactivation and Protection of *Azotobacter vinelandii* Nitrogenase"

SOURCE: Shanghai ZHIWU SHENGLI XUEBAO [ACTA PHYTOPHYSIOLOGIA SINICA] in Chinese No 3, Aug 81 pp 225-231

TEXT OF ENGLISH ABSTRACT: The content of iron protein, being the more oxygen-sensitive component of nitrogenase, was found to be much lower than the Mo-Fe protein in the extracts prepared from sonicated *Azotobacter vinelandii* cells. The nitrogen-fixing activity of the extracts remained practically unchanged on adding partially purified Mo-Fe protein, while it was increased many times on adding partially purified iron protein.

The nitrogen fixing activity of *A. vinelandii* extracts, as was shown earlier in the literature, might be recovered in pellets obtained by centrifugation. It was discovered that an enhanced activity of the extracts due to added iron protein was

[Continuation of ZHIWU SHENGLI XUEBAO No 3, Aug 81 pp 225-231]

also obtained under the same treatment and was more oxygen resistant than that of the free iron protein. Thus it seemed probable that the added iron protein might combine with certain constituents of the extracts to form a complex, which could be separated by centrifugation and was more resistant to oxygen.

Mg^{++} was a necessary factor to prevent the nitrogen-fixing activity of the extracts from being inactivated by oxygen. The extracts lost their activity completely as soon as they passed through Sephadex G-25 column in air, but maintained their full activity under the same treatment if 0.01 M $MgCl_2$ was included in both the equilibrating and eluting buffers. Addition of a suitable amount of Mg^{++} to the cell suspension before sonication not only enhanced the activity of the extracts obtained, but also made it still more resistant to oxygen inactivation.

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TITLE: "Nitrogen Fixation and Hydrogen Evolution by *Anabaena azotica* Ley HB686"

SOURCE: Shanghai ZHIWU SHENGLI XUEBAO [ACTA PHYTOPHYSIOLOGIA SINICA] in Chinese No 3, Aug 81 pp 241-248

TEXT OF ENGLISH ABSTRACT: *Anabaena azotica* Ley HB686, native to China, has been selected for the study of nitrogen fixation and hydrogen evolution. In the present investigation the following phenomena have been observed:
1. Under illumination (20,000 lux) the acetylene reduction and the evolution of hydrogen and oxygen by the filaments of blue-green algae A. *azotica* HB686 increase with time. In darkness the H_2-evolution is much less. It is shown that the H_2-production is light-dependent. Although the production of both C_2H_4 and O_2 is linear, that of O_2 has a higher rate. It is highly probable that the rate of photosynthesis is higher than that of nitrogen fixation. A. *azotica* contains hydrogenase which catalyzes the consumption of H_2. Under illumination at the beginning of two hours, the consumption of H_2 increases with time. Afterward it comes to a smooth plateau. It may be supposed that the H_2 released by nitrogenase combines with the O_2 released from photosystem II. In addition, H_2 consumption by A. *azotica* in darkness is also much lower. This demonstrates that light is necessary for the consumption of H_2.

[Continuation of ZHIWU SHENGLI XUEBAO No 3, Aug 81 pp 241-248]

2. The characteristics of hydrogen consumption catalyzed by hydrogenase have been studied. Argon has been used as gas phase which contained 4 percent H_2 and various concentrations of O_2. When O_2 concentration is lower than 2 percent, the rate of consumption of H_2 increases with an increase of O_2 concentration, while with 4 percent O_2 the consumption of H_2 does not increase. The Km of hydrogenase for oxygen is 0.5 mM. The concentration of H_2 affects the rate of hydrogen consumption significantly. The Km of hydrogenase for hydrogen is 1.6 mM.
3. The activity of acetylene reduction may be enhanced when the gas phase contains 10 percent H_2. It is probable that the Knallgas reaction can utilize the excess oxygen and thereby keep the nitrogenase under anaerobic conditions and protect the enzyme within the cell.
4. Various concentrations of ammonium ion (from 0.01 mM to 10 mM) inhibit acetylene reduction and H_2-production to various degrees. The acetylene reduction and H_2-production were severely inhibited by 10 mM ammonium.
5. DCMU is an inhibitor of photosystem II. It is well known that DCMU inhibits the O_2 evolution by blue-gree algae. There is much controversy among different authors about the effects of DCMU on H_2-production by blue-gree algae. We observed that the ethylene and hydrogen production was inhibited by about 20 percent by DCMU (2×10^{-5}). Both acetylene reduction and H_2-production were inhibited significantly by DNP, an uncoupler of photophosphorylation, at a concentration of 5×10^{-4} M.

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TITLE: "Effect of Abscissic Acid on the Senescence of Detached Rice Leaves"

SOURCE: Shanghai ZHIWU SHENGLI XUEBAO [ACTA PHYTOPHYSIOLOGIA SINICA] in Chinese No 3, Aug 81 pp 257-263

TEXT OF ENGLISH ABSTRACT: In order to study the senescence of plant organs, detached rice seedling leaves were used as the experimental material. It was found that treatment with ABA accelerated the decline of chlorophyll content and protein degradation, and concurrently enhanced the activities of ribonuclease, cellulase and acid phosphatase, with cellulase activity being enhanced most remarkably, to two to five times that of the control. The rise in cellulase activity increased with increasing ABA concentration. The presence of cellulase has been shown in the abscission zone of the kidney bean and orange (Abeles, 1969, Lewis and Varner, 1970, Durbin, 1980, Huberman, 1975), as well as in the ripening avocado (Awad and Young, 1979, Pesis, 1978), peaches (Hinton and Pressey, 1974) and tomato (Sobotka and Watada, 1971), but has never been demonstrated previously in rice leaf blades.

[Continuation of ZHIWU SHENGLI XUEBAO No 3, Aug 81 pp 257-263]

It is considered that the enhancement of the activity of these hydrolytic enzymes by ABA promotes the disintegration of cellular inner structure, thus speeding up the senescence.

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TITLE: "Effects of Ethrel and Gibberellic Acid on the Sex Expression of *Lagenaria leucantha* Rusby"

SOURCE: Shanghai ZHIWU SHENGLI XUEBAO [ACTA PHYTOPHYSIOLOGIA SINICA] in Chinese No 3, Aug 81 pp 265-273

TEXT OF ENGLISH ABSTRACT: The sex expression of Chinese white-flowered gourd, *Lagenaria leucantha* Rusby, cv. "Hangzhou long gourd," can be effectively controlled by foliar spray with ethrel and gibberellic acid.

As a result of the treatment with ethrel at the 4 to 6 leaf stage, pistillate flowers were produced continuously from the 11th or 12th nodes to higher than the 20th nodes along the main shoot, no matter whether long-, short- or natural day length conditions were used. The earlier the application to the plant, the more pistillage flowers would be produced. As for the case of the side branches, however, no appreciable difference was found in the sex expression between the ethrel-treated and the control plants, while on those treated with gibberellic acid more staminate flowers were produced, especially on those under long photoperiod conditions.

When ethrel was applied in combination with gibberellic acid, the effect of ethrel in sti

[Continuation of ZHIWU SHENGLI XUEBAO No 3, Aug 81 pp 265-273]

in stimulating femaleness was suppressed by high concentration and not by low concentration of GA_3.

It was found that not all the staminate flower buds could be changed to pistillate flowers. Only the flower buds with anthers shorter than 0.2 to 0.4 mm in length could be changed to pistillate flowers, while those with anthers longer than 0.5 mm could not be changed and were little affected by ethrel treatment. Application of ethrel did not directly induce the production of an additional pistillate flower, but did just shift the sex expression from male to female.

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TITLE: "The Effects of Some Growth Substances on the Cell Wall Regeneration in the Tobacco Mesophyll Protoplasts"

SOURCE: Shanghai ZHIWU SHENGLI XUEBAO [ACTA PHYTOPHYSIOLOGIA SINICA] in Chinese No 3, Aug 81 pp 275-280

TEXT OF ENGLISH ABSTRACT: The tobacco mesophyll protoplasts are released by EA_3-867 cellulase and cultivated in NT medium (Nagata and Takebe, 1971) with thin layer liquid method. Different growth substances are added individually into the basal medium. Afterwards, Calcofluor white VBL is used to examine their effects on the formation of the cell wall. The results are as follows:
1. Kinetin is essential for the regeneration of the cell wall and 0.25 mg l^{-1} is adequate and suitable.
2. 2, 4-D has no effect on the regeneration of the cell wall, but its absence decreases the viability of the cell. The optimal concentration is about 2 mg l^{-1}.
3. A concentration of coumarin higher than 200 mg l^{-1} will depress the regeneration of the cell wall, and also inhibit the growth of the cell.

[Continuation of ZHIWU SHENGLI XUEBAO No 3, Aug 81 pp 275-280]

4. A concentration of triiodobenzoic acid higher than 20 mg l^{-1} will depress the regeneration of the cell wall, and also inhibit the growth of the cell.
5. ABA does not inhibit the regeneration of the cell wall, but promotes the budding of the cell.
6. GA_3 at 50 mg l^{-1} does not affect the regeneration of the cell wall, but promotes the growth of the cell; at 100 mg l^{-1} it will inhibit the regeneration of the cell wall and the growth of the cell.

The effects of these growth substances on the regeneration of the cell wall are discussed.

9717
CSO: 4009/53

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TITLE: "Studies on Enterotoxemia in Piglets. III. An Improved Vaccine and Its Application"

SOURCE: Tianjin XUMU SHOUYI XUEBAO [ACTA VETERINARIA ET ZOOTECHNICA SINICA] in Chinese No 3, 1981 pp 163-168

TEXT OF ENGLISH ABSTRACT: 1. It was reported from a few pig farms in the spring of 1976 that the immunity conferred by the original enterotoxemia vaccine was not as good as expected. After investigating this condition, we suggested that it might be due to the low level of doses used or an insufficient antigen content in the vaccine.
2. To improve the quality of this vaccine a concentrated aluminum hydroxide vaccine was produced with a mixed culture of two different strains of Clostridium perfringens type C, one of which was isolated from a piglet which had died of enterotoxemia and the other from a sheep which had died of "struck."
3. Based on experiments with this improved vaccine, we recommended using two injections, 5-10 ml each, to immunize the pregnant sows which had not been injected

[Continuation of XUMU SHOUYI XUEBAO No 3, 1981 pp 163-168]

with this vaccine before, and one injection, 3-5 ml per dose, for pregnant sows which had been given this vaccine.
4. On some pig farms where piglet enterotoxemia had been prevalent previously, the disease was prevented by using the improved vaccine.

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TITLE: "Genetic and Heterotic Behavior of Carcass Qualities and Visceral Characteristics of the Northeastern Indigenous and Landrace Breeds of Swine and Their Crosses. II. Genetic and Heterotic Behavior"

SOURCE: Tianjin XUMU SHOUYI XUEBAO [ACTA VETERINARIA ET ZOOTECHNICA SINICA] in Chinese No 3, 1981 pp 199-206

TEXT OF ENGLISH ABSTRACT: Concomitant with studies on the carcass and visceral traits of the northeastern indigenous (M) and Landrace (L) pigs, parallel observations were made on their reciprocal F_1 crosses (L.M and M.L) and Landrace backcross progenies from reciprocal F_1 gilts, with the objective of elucidating the hereditary and heterotic patterns of these traits. Results indicated that traits signifying adiposity, such as backfat thickness, relative weights of perirenal fat, peripheral fat and total fat, were dominant or over-dominant characteristics. Crossbred progenies exhibited highly significant heterosis, in contrast to the current hypothesis that carcass traits of swine are of the intermediate inheritance

[Continuation of XUMU SHOUYI XUEBAO No 3, 1981 pp 199-206]

category and that crossbreeding will not bring about hybric vigor. This provides us with a new scientific resource for further exploitation of heterosis in addition to its application in reproductive and growth traits in order to satisfy our increasing fat demand.

Body length, rib number and skin thickness behaved as intermediate inheritance. Loin-eye area, percentage of ham cut, relative weights of skin and bone were also intermediate in inheritance, with an inclination toward the low-order parentage. Dressing percentage, number of thoracic vertebrae, relative weights of forequarter and loin cuts and of mesentary fat likewise behaved intermediately, although with occasional inclination toward the high-order parentage. Relative weight of lean cut, being highly correlated negatively with fatty tissue, also demonstrated strong dominance, approaching the low-order indigenous stock. All visceral traits exhibited intermediate inheritance without heterosis.

Mechanisms concerning the genetics and heterosis of traits, such as perirenal fat and others, were discussed with caution.

9717
CSO: 4009/69

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TITLE: "Research on Chlamydialic Miscarriage in Sheep--Pathogenic Isolation and Identification"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 8, 20 Aug 81 pp 1-5

ABSTRACT: In recent years, spontaneous abortions have occurred in some major sheep and goat areas, farms in Gansu, Qinghai, Nei Menggu, and Xizang. Very low rate of such common bacillus as Brucella and Salmonella could be found and a survey study also excluded nutrition as the direct cause. In 1973, the Nei Menggu Research Institute of Animal Husbandry and Veterinary Medicine reported the observation of Chlamydiales virus from the smears of goats that had miscarried. For the purpose of further clarifying the condition, in 1978-80, 108 aborted fetuses were gathered from sheep and goat farms of Gansu, Qinghai, Nei Menggu, Xizang, etc. for artifi-

[continuation of SHOUYI KEJI ZAZHI No 8, 81 pp 1-5]

cial infection, pathogen isolation, Chlamydiales identification, etc. Three suspected strains of Chlamydiales, A_1, A_{26}, A_{34}, antigens and immune sera were thus established. The complement fixation reaction method, using the preliminarily made antigens, was employed to examine 176 serum specimens of ewes of Dulan of Qinghai and 11 specimens of Tianshou of Gansu. Assuming a result of 1 : 16 or above to be positive, of these specimens, 47 of those of Dulan and 4 of those of Tianshou were identified as positive, at a rate of 26.7 and 34.4 percent respectively.

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TITLE: "Report of Piglet Yellow Dysentery Prevention and Treatment Experiment"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 8, 20 Aug 81 pp 5-9

ABSTRACT: Piglet yellow dysentery is an acute infectious disease of newborn piglets caused by certain serotypes of pathogenetic Escherchieae. Large quantities of

[continuation of SHOUYI KEJI ZAZHI No 8, 81 pp 5-9]

research studies in England, the USA, etc. have produced some live or inactivated vaccines for oral administration or injection of pregnant sows to prevent this disease in the piglets to be born. Effects of the vaccines are not uniformly reported, however. According to the English scientist, Nagy, who visited China in 1980, the purified K_{88} antigen immunisation of sows produced 70 percent rate of protection of the piglets in England, and 30 percent in the USA. The difference is perhaps, he claimed, related to the complex types of Escherchieae in various countries. Chinese scientists FANG Dingyi [2455 1353 0001] et al used Escherchia $O_{33}:K_{NM}$ to prepare a biological preventive agent and its effect has been reported to be obvious. In 1978-80, the authors isolated the Chuanya strain, $O_{?}:K_{+}$, from healthy piglets to prepare a vaccine, named Chuanya-30, which is an Escherchia that does not produce enterotoxin. The liquid vaccine made from it has been found to be safe and effective when it is fed orally to newborn piglets before breast-feeding. Its effect of preventing yellow dysentery is obvious and there are no adverse side-effects. This liquid vaccine is easy to prepare at a very low cost. Experimental data of Jul-Sep, 79 are reported.

This paper was received for publication on 30 Dec 80.

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TITLE: "A Study on the Mild Type Hog Cholera"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 8, 20 Aug 81 pp 22-27

ABSTRACT: In the past decade, epidemics of a swine infectious disease with high fever as the major symptom have been occurring in some regions of Jiangsu Province. In most cases, there are no observable skin lesion, congestion, hemorrhage, etc. symptoms. Incidences, at rates of 15-17 percent, usually occur during the period of Jun through Oct, and the mortality rate varies between 24 and 27 percent. The masses call it nameless fever or white skin disease, as its pathogenesis has been unknown. The authors carried out some diagnostic, prevention, treatment experiments. The results demonstrate that this is a mild form of hog cholera, caused by the swine fever virus. Clinical symptoms of the disease, dissection observations, infection experiments, and immunization experiments are reported.

6248
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END

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23 November 1981

China Report

AGRICULTURE

No. 174

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JPRS 79501

23 November 1981

CHINA REPORT

AGRICULTURE

No. 174

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENRAL INFORMATION

National

Water Resources Availability, Use Reviewed
(GUANGMING RIBAO, 15 Sep, 9 Oct 81)..... 1

Deficiency in North, by Chen Zhikai
Underground Water Survey, by NEW CHINA NEWS AGENCY

Improved Economic Conditions in Historically Poor Counties Cited
(Department 4, People's Communes Management Bureau, Ministry of Agriculture; GONGSHE CAIWU, 6 Aug 81)..... 5

Socialist Basis of Contracting With Households Defended
(Survey Detachment, Agricultural Finance Department, Ministry of Finance; NONGYE JINGJI WENTI, 23 Sep 81)..... 9

More Houses Being Built in Rural Areas
(XINHUA, 7 Nov 81)..... 20

Guidance Given for Gathering Wild Plants for Industrial Uses
(ZHONGGUO CAIMO BAO, 10 Sep 81)..... 21

Vice Minister of Agriculture Outlines Accounting Procedures
(GONGSHE CAIWU, 6 Aug 81)..... 24

Boosting Production of Processed Foodstuffs Discussed
(XINHUA, 7 Nov 81)..... 34

Briefs
Cotton Fire Prevention 35
Citrus Output 35

Tree Planting 35
Scientific Farming Promotion 35

Anhui

Briefs
County Animals 36
County Crops 36

Fujian

Fruit, Tea Production Revived in Putian Prefecture
(Putian Prefecture Communications and Liaison Station; FUJIAN RIBAO, 8 Oct 81) 37

Gansu

Feng Jixin Conducts Rural Investigations
(Gansu Provincial Service, 1 Nov 81) 39

Guangdong

Higher Early Rice Yields Credited to System of Responsibility
(NANFANG RIBAO, 19 Oct 81) 40

Briefs
Guangdong Prefecture Flood Disaster 42
Summer Procurement 42

Guangxi

Briefs
Summer Grain Procurement 43

Hebei

Conservation of Water Resources Urged
(BEIJING RIBAO, 30 Aug, 22 Sep 81; HEBEI RIBAO, 29 Aug 81) 44

Major Users Initiative
Plant's Conservation Efforts, by Fan Sancheng
Scientific Water Use, by Water Conservation Office of Shijiazhuang City

Oil Bearing Crops Expansion Reported
(Food Grains and Oil Department of the Provincial Agricultural Bureau; HEBEI RIBAO, 27 Aug 81) 47

Heilongjiang

Briefs
Sunflower Harvest 48

Henan

Briefs
Wheat Cultivation Circular 49

Hubei

Rural Income From Side-Line Production Reportedly Increases
(HUBEI RIBAO, 29 Sep 81)..... 50

Briefs
County Procurement 52

Liaoning

Briefs
Product Procurement 53
Tobacco Procurement 53
Tussah Cocoons Output 53
Haicheng County Grain 53

Qinghai

Briefs
Animal Husbandry 54

Shandong

Efforts To Combat Drought, Sow Wheat Reported
(DAZHONG RIBAO, 27, 30 Sep 81)..... 55

Yantai, Weifang Prefectures, by Luo Shouliang, et al.
Qingdao Municipality, by Cui Sulan

Some Solutions to Wheat Rust Problems Suggested
(Wang Zhengping; DAZHONG RIBAO, 30 Sep 81)..... 59

Hebei Sends Cotton Study Group to Shandong
(Hebei Provincial Service, 24 Oct 81)..... 61

Briefs
Draft Animals 62
Cotton Procurement 62
Wheat Sowing 62

Xinjiang

Briefs
Prefecture Cotton 63

Zhejiang

Rural Areas Increase Purchasing Power
(XINHUA, 1 Nov 81)..... 64

Briefs

Lacquer Trees Planted 65
Procurement Conference 65

II. PUBLICATIONS

Table of Contents of 'ZHONGGUO XUMU ZAZHI' No 4, 1981..... 66

Table of Contents of 'SENGONG KEJI TONGXUN' Nos 6-7, 1981..... 69

HONG KONG MEDIA ON CHINA

National

Current Rosin Output Figures, Planned Increases Reported
(Liu Xiangqi, Huang Zhenggen; CHING-CHI TAO-PAO, 14 Oct 81)... 71

ABSTRACTS

AGRICULTURE

DONGWU XUEBAO /ACTA ZOOLOGICA SINICA/, No 3, Sep 81..... 73

NONGYE JIXIE XUEBAO /TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY/, No 3, 25 Sep 81..... 75

AGRICULTURAL RESEARCH

GUANGDONG NONGYE KEXUE /GUANGDONG AGRICULTURAL SCIENCES/, No 5, 8 Sep 81..... 78

FISHERIES

SHUICHAN XUEBAO /JOURNAL OF FISHERIES OF CHINA/, No 3, Sep 81..... 79

PLANT PROTECTION

ZHIWU BAOHU XUEBAO /ACTA PHYTOPHYLACTICA SINICA/, No 3, Sep 81..... 81

I. GENERAL INFORMATION

WATER RESOURCES AVAILABILITY, USE REVIEWED

Deficiency in North

Beijing GUANGMING RIBAO in Chinese 9 Oct 81 p 3

[Article by Chen Zhikai [7115 1807 1956]: "Our Nation's Water Resources"]

[Text] During the past 2 years, our nation's northern region has suffered from persistent drought and has had less rain than usual. There is a growing shortage of water for use in Beijing, Tianjin and Hebei. Some cities and regions already lack water, and water resources have become a question of popular concern.

Characteristics of Water Resources in Our Nation

Water circulates in nature. Through the exchange of moisture between the land and the sea, part of the water on land is renewed each year. This amount of fresh water that can be renewed year after year includes ground surface water, water in the soil and underground water. They have an economic and utility value. This is what we ordinarily call water resources. Rain from the atmosphere is the source of replenishment.

Each year, our nation's wide expanse of land receives an average total of about 6 trillion cubic meters of rainfall, equivalent to an average of 630 millimeters, or 21 percent less than the average rainfall of 800 millimeters over the land of the whole earth. Of the rainfall, 56 percent becomes water in the soil, and this amount is consumed by soil evaporation and plant transpiration. Only 44 percent forms the runoff of rivers. The total runoff of the rivers of the nation is about 260 billion cubic meters, including the underground runoff drainage of 600 billion cubic meters. Ice on rivers and snow on high mountains provide an additional 50 billion cubic meters of water.

Compared to other nations, the amount of runoff in the rivers of our nation is less than that of Brazil, the Soviet Union, Canada and the United States; it ranks fifth in the world. By population average, our nation's per capita average amount of water is only 2,700 cubic meters a year, only one-fifth of the world's per capita average of 12,900 cubic meters.

The regional distribution of water resources in our nation is very uneven. There is more water and less cultivated land in the south. There is less water in the north but more cultivated land. The combination of water and soil resources is extremely

unbalanced, and this has brought about difficulties in the development of agricultural and industrial production in the northern part of our nation. In particular, the distribution of water and soil resources in the regions of the Haihe, Liaohe, and Huaihe is the most unbalanced; the area of cultivated land of the three river valleys constitutes 28 percent of the total of the nation, but the annual runoff is only 4 percent of that of the whole nation. The conflict between supply and demand is very outstanding.

Because of the effects of the monsoon climate, rainfall and runoff in most regions are unevenly distributed during the seasons, and the variation between years is also great: 2-3 consecutive years or even 5 years of drought or rain and waterlogging occur alternately. To fully utilize water resources, the amount of water must be regulated and stored so that the abundant water supply can be used to supplement the shortage of water supply, and the amount of water should be redistributed over time.

The Present Situation of Utilizing Water Resources

Over the 32 years since founding of the nation, the whole nation has built many reservoirs and projects to draw and to lift water. At present, the amount of water from the runoff of rivers being used each year is about 410 billion cubic meters, the amount of underground water drawn each year is about 50 billion cubic meters, a total of 460 billion cubic meters, constituting 16 percent of the total amount of runoff. The percentage of utilization of the Haihe, Liaohe and Huaihe is the highest, reaching 50 to 60 percent. The percentage of utilization of the Changhiang is 15 percent, but the percentages of utilization of the rivers in the southwest are less than 1 percent. The ability of presently available water storage projects to regulate the runoff of rivers is still very low. The total amount of water stored constitutes only 7.7 percent of the total amount of runoff, lower than the world average. In the future, it is necessary to increase the regulating capacity of the reservoirs.

The utilization of underground water is concentrated in the northern plains; the amount of water drawn constitutes about 30 percent of the underground water resources of the plains. But this is not balanced among the river valleys. Seventy percent of the underground water of the Haihe Plain have already been exploited; the percentage is about 20 percent in the Huaihe Plain and there is still a relatively great potential for utilization.

Agriculture is the main user of water, constituting 87 percent of total consumption, and the development is very uneven. The whole nation still has 800 million mu of cultivated land which do not have irrigation facilities each year an average of 300 million mu of cultivated land suffers from drought, and drought resistance has become a constant task. Because of the insufficient water source, the percentage of assurance of irrigated areas is low. At the same time, wasteful use of water also exists because the land is not even, projects are not complete, irrigation techniques are backward, management lacks a system, and because the quotas for water use are too high. In some irrigated regions, the quota for the use of water for each mu of dryland crops reaches as high as over 1,000 cubic meters. Most of the ditches do not have measures to prevent seepage. Seepage during the transport of water is serious; on the average, it may reach about 40 percent of the amount of water drawn.

Industrial consumption of water in the cities constitutes 6.6 percent of total consumption. At present, although their percentage consumption is not high, because of the concentration at the localities, because of the rapid increase in the use of water (in the north China region and the Liaoning area where industry is more concentrated, the percentage of industrial use of water has surpassed 10 percent and even 30 percent), and because construction for water sources has not caught up, many cities throughout the nation have an extreme shortage of water supply at present. The conflict of competion for water by industry and agriculture is sharp. Some cities have overexploited underground water, causing the underground water level to drop in a large scale, forming large areas of funnels and even causing the ground surface to sink. Poor management of water and serious waste of water also exist in the use of water in cities. The percentage of recycling and reusing water by industry is low. The quotas for water use are high. Therefore, to solve the problem of water in cities for industrial use, regulation of water flow and opening water sources must be equally emphasized.

Because agriculture uses massive amounts of chemical fertilizers and farm chemicals, because the industries release large amounts of polluted water and waste, our nation's major rivers and lakes have been polluted to varying degrees. Pollution is more serious in the rivers in the north than those in the south.

Strengthening the protection of water resources is an urgent task in the utilization and management of water resources.

Future Outlook

As the population increases, as the living standards of the people rise, as industrial and agricultural production develops, the amount of water used in our nation will increase. Preliminary estimates show that by the end of this century, the total amount of water needed by agriculture throughout the nation and industries in the cities will be about 700 billion cubic meters, constituting 26 percent of our nation's water resources. Viewing the whole nation, the water resources in our nation can satisfy the needs in the year 2000. But because of the uneven distribution of the regions of water resources, in the four river regions of Huanghe, Huaihe, Haihe, and Liaohe in the north where water resources are deficient, it is estimated that in the future there will be an average annual shortage of 50 to 70 billion cubic meters. The proportion of industry in these regions is large, the area of cultivated land is large, the present rate of utilization of water resources is high, the potential for exploiting local water resources is not large, and water resources have already become the controlling factor in agricultural and industrial development in these regions. Besides conserving the use of water, there must be rational readjustment of the distribution of industry and agriculture and full utilization of local water resources. In the long run, the problems of water shortage in these regions can only be solved by drawing water from river valleys outside these regions. Although the water resources in the south are rich, conditions for the development and utilization of water resources in some regions (mountainous and hilly regions, plateaus) are very difficult. To fully utilize local water resources, a fairly large number of water storage, water drawing and water lifting projects must be built.

In general, to adapt to the needs of building the four modernizations, and according to the characteristics of our nation's water resources, we must have a sufficient understanding of the difficulty of the task of water conservancy construction and the

seriousness of the shortage of water in our nation. We should start out from the full and rational utilization of presently available water resources, further understand the situation of our nation's water resources, actively study ways to realize a balanced supply and demand of water resources, take measures to conserve the use of water and to prevent pollution, and strengthen unified planning and management of water resources so that the problem of water resources in our nation can be fundamentally solved.

Underground Water Survey

Beijing GUANGMING RIBAO in Chinese 15 Sep 81 p 1

[Article by NEW CHINA NEWS AGENCY: "Known Underground Water Resources in Our Nation Reach 800 Billion Tons Per Year"]

[Text] The conference on the exchange of experience and evaluation of the nation's underground water resources currently being held in Beijing has announced: The natural resources of underground water found in our nation reach 800 billion tons a year. This is an important material base for people's lives and for building the four modernizations in our nation.

The results of hydrogeological surveys show that the nation's underground water resources are rich, the distribution is wide, and the water quality is good. The relatively thick Quaternary Period sediment that has good water storing conditions is widely distributed in northern China, Sonliao, Guanzhong, the Yingchuan Plain and the five large basins in Shanxi which are the major food grains producing regions of the northern part of our nation. The underground water resources are rich. Preliminary surveys show the underground water resources in the 15 provinces, cities, autonomous regions of the north and northern Jiangsu and northern Anhui amount to 300 billion tons a year. The south has a richer deposit of underground water. The underground water resources of the southern provinces, cities and autonomous regions amount to 500 billion tons a year.

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IMPROVED ECONOMIC CONDITIONS IN HISTORICALLY POOR COUNTIES CITED

Beijing GONGSHE CAIWU [COMMUNE FINANCIAL AFFAIRS] in Chinese No 8, 6 Aug 81 pp 24-27

[Article by Department 4, People's Communes Management Bureau, Ministry of Agriculture: "Pronounced Changes in One-third of Poor Counties In the Country in 1980"]

[Text] Since the Third Plenary Session of the 11th Party Central Committee, every province, municipality, and region has undertaken a great amount of work to effect rapid changes in poor counties, adopting many measures, notably those following general implementation throughout the rural collective economy of various forms of a system of responsibility for production, which have effectively surmounted egalitarianism in the calculation of remuneration for labor, and given substance to the socialist principle of "from each according to ability; to each according to work." This has aroused the extreme enthusiasm of peasants to cure poverty and become prosperous, as a result of which the rural economies in these poor counties have produced remarkable changes, and a fine situation such as has not been seen in many years has emerged.

Statistics from 29 provinces, municipalities and regions show that of 221 poor counties in which per capita distributions over a period of 3 consecutive years have been less than 50 yuan (we term these counties poor counties), in 1980, 72 of them, or 32.6 percent of all poor counties, showed conspicuous changes, the level of distributions to commune members climbing above 50 yuan. These included the nine counties of Daotang, Xiajin, Chiping, Xinxian, Heze, Chengwu, and Juye in Shandong Province, and Luyi and Qixian in Henan where commune member distributions averaged more than 90 yuan per capita, more than the national average level of distributions to commune members. In 12 counties, distributions to commune members averaged more than 70 yuan per capita, close to the national average. In 13 counties, they were between 60 and 70 yuan, an increase of about 50 percent. In 38 counties, distributions to commune members did not yet average 60 yuan per capita; nevertheless, when compared with the previous 3 years, substantial increase took place.

Among these strikingly changed counties, the largest number were in Shandong and Henan provinces, where they numbered 19 and 18 respectively, a total of 37 for the two provinces, or 50 percent of the total number. Poor counties in Shandong have striking changes amounted to 79.2 percent of the total number of poor counties in the province. Here, not only was the number large, and the proportion great, the extent of increase in commune member distributions was also large. In the two counties of Gaotang and Xiajin, distributions to commune members vaulted from an average of somewhat more than 40 yuan per capita of the past several years to join the ranks of wealthy counties with per capita income of 150 yuan. Several counties with fairly

low levels of distribution also increased their average amounts by 17 to 24 yuan over that of the past 3 years. In Henan Province, poor counties with striking changes almost amounted to 69.2 percent of the total number of poor counties in the province. Counties having distributions averaging more than 70 yuan per capita numbered eight. Luyi County reached 104 yuan, and Qixian reached 91.70 yuan, and the notorious "qionglankao" [4522 5695 5072] attaining 84.10 yuan, almost double. Second were five counties in Guizhou, four counties in each of Gansu, Hebei, and Anhui, three counties in each of Yunnan, Shaanxi, and Fujian, two counties in each of Guangdong, Guangxi, and Xinjiang, and one county each in Shanxi, Ningxia, and Zhejiang, in all of which pronounced changes began to be made.

How is it that these enduringly poor counties have been able to change so greatly during the past few years. Specifically, the main reasons are as follows.

1. Eradication of the influence of leftist ideology and the spread of various forms of a system of responsibility linked to output greatly aroused the initiative of the peasants.

Since the Third Plenary Session of the 11th Party Central Committee, in the process of instituting the party's rural economic programs, all echelons of CCP committees have borken the bonds of leftist ideology, and have adapted general methods to local situations for the spread of various forms of a system of responsibility for production, which has aroused the initiative of commune members. In 1980, in Henan, Shandong, and Guizhou provinces, systems of responsibility linking calculation of remuneration to output in a contracting for production and for work with individual households, linking of output to the workforce, and specialized contracting were instituted. In the four hardship prefectures of northwestern Shandong, calculation of remuneration was linked to output by teams and workers in 54 percent of all production teams. Contracting for production with individual households was done with 25.6 percent of all production teams, and contracting for fixed quotas of work was done in 17.7 percent of all production teams. In Henan Province, a system of responsibility linked to production exists in 70 percent of production teams. Experience has shown that so long as the system is suited to local productivity development levels and cadre management levels, increases in output universally result. In Guizhou Province, which is known throughout the country as being "poor," because many counties are characterized by a dispersal of commune member residences in mountain regions, ever since 1979 they have promoted contracting for production with individual households or contracting for work with individual households as the major form of the system of responsibility for production. This has aroused the initiative of the peasants and promoted changes in the situation in five poor counties. It has also quickened the pace of changing in poor conditions in 22 poor counties among the remaining 38 counties in the province. For some commune members, average distributions per capita increased by more than 10 yuan in 1 year. In addition, commune member household sideline occupations developed very rapidly, income becoming higher than average national levels as the average per capita reached 73 yuan.

2. Implementation of various policies, using local characteristics as the point of departure, readjustment of crop patterns, and making the most of advantages for production of cotton and other economic crops.

Shandong adopted a program of "attention to both grain and cotton, the emphasis on cotton," instituting a policy of grain and cotton linkage, and working out concrete arrangements to provide consumption grain to cotton farmers. They promoted "Lumian No 2" superior variety, winning a great bumper cotton harvest. In the four

prefectures of northwestern Shandong, from cotton sales alone, income averaged 62 yuan per capita. In Chiping County, income from cotton amounted to 78.5 percent of total income, income per capita averaging somewhat more than 154 yuan. In Gaotang County, income from cotton amounted to 91.4 percent of total income, and income per capita averaged 211 yuan. Henan Province made the most of advantages provided by the large tract of sandy soil in the old course of the Yellow River, which is suited to the growing of peanuts, to wage a war of self-emancipation. In Shanqiu Prefecture, peanut output increased fourfold, and cotton output increased 2.7 fold for an increase of more than 100 million yuan from these two crops alone. Commune members said: "Linking production is like linking one's heart; one puts heart and soul into that to which one is linked." In their summarization of their experiences with a bumper harvest and bumper earnings in 1980, they formed a 12 character conclusion: "Policies were good, a system of responsibility, seeds were superior, and the heavens helped."

3. Improved administration and management with lowering of production costs.

Statistics from 10 poor counties in Henan and Hebei where striking changes have occurred show total costs as a proportion of total income in 1980 to have dropped from the 38 percent of the previous year to 32 percent. Because of this decline in costs, in 10 counties average increase in average per capita income was 5.10 yuan with Yucheng County in Henan Province showing average per capita increase of 13.27 yuan, and Chenqiu County showing average per capita increase of 11.60 yuan.

4. State reduction in agricultural taxes to lighten the peasants' load.

According to relevant data, the 1979 state reduction of agricultural taxes by 475.9 million yuan, plus reduction by each jurisdiction of 26 millin yuan in surtaxes amounted to a total reduction of 539.9 million yuan, and in 1980 there was another reduction of 746 million yuan for a 2 year total reduction of 1,285,9000,000 and an average 1.60 yuan per capital reduction for the peasants throughout the country. Moreover, in some hardship areas, the amount of reductions was even somewhat larger. From the 1980 state reduction in agricultural taxes, units throughout the country with distributions averaging less than 50 yuan per capita benefitted with reductions averaging 3.47 yuan per capita. More importantly, the encouragement to their morale was very great. Yunna Province reported that in 1979 the state reduced requisition purchases of grain from the province by 630 million jin, and last year again reduced it, this time by 70 million jin in a change from the previous situation of large procurement and large sales enabling them to put down their burden to march along the road toward curing poverty and becoming wealthy with a dight load!

5. In the realm of leadership, quite a few provinces launched discussion of curing poverty and becoming prosperous, and each department individually contracted labor to change poor production team quotas with very good results. However, a look at annual statistical reports for 1980 on distributions of earnings in rural people's communes shows that there are still 149 counties in the country where between 1977 and 1980 distributions from the collective averaged less than 50 yuan per capita. We must diligently summarize experiences in curing poverty to become prosperous and hasten the pace of change in poverty situations.

Addendum: 149 counties in the country with distributions per capita averaging less than 50 yuan.

In Guizhou Province, 38 counties as follows: Bijie, Nayong, Weining, Dafang, Hezhang, Zhijin, Jinsha, and Qianxi in Bijie Prefecture; Shuicheng, Panxian, and Liuzhi counties in Liupanshui Prefecture; Puan, Qinglong, Ceheng, Xingren, Anlong, and Zhenfeng counties in Xingyi Prefecture. Puding, Xiuwen, Zhenning, and Ziyun counties in Anshun Prefecture; Renhuai, Tongzi Chishui, Xishui, Fenggang, Zheng'an, and Wuquan counties in Zunyi Prefecture; dejiang, Yanhe, and Yinjiang counties in tongren Prefecture; Sandu, Changshun, Libo, and Luodian counties in the Qiannan Autonomous Region; Danzhai, Congjiang, and Leishan counties in the Qiandongnan Autonomous Region. In Gansu Province, 22 counties as follows: Huining, Tongwei, Weiyuan, Lintao, and Longxi counties in Dingxi Prefecture. Lixian, Xihe, Wushan, Qin'an, Zhangxian, Qingshui, Gangu, and Zhangjiachuan counties in Tianshui Prefecture. Zhuanglang, and Jingjing in Pingliang Prefecture; Hezheng, Dongxiang, and Guanghe counties in the Linxia Autonomous Zhou; Wudu and Yanchang counties in Wudu Predecture; Zhouqu, and Zhuoni in the Gannan Autonomous Zhou. In Yunna Province, 20 counties as follows: Yanjin, Daguan, Yongshan, Qiaojia, and Yiliang in Zhaotaong Prefecture; Xichou, Yanshan, Malipo, Maguan, Guangnan, and Funing in Wenshan Autonomous Zhou; Luchun, and Honghe in Honghe Autonomous Zhou; Luquan in Chuxiong Autonomous Zhoua; Yunlong, Weishan, and Nanjian counties in Dali Autonomous Zhou; Bijaing and Gongshan counties in Nujiang Autonomous Zhou; Huize County in Quijing Prefecture. In Shaanxi Province, eight counties as follows: Zizhou, Fugu, Shenmu, Jingbian, Hengshan, and Qiaxian in Yulin Prefecture; Zichang in Yan'an Prefecture and Linxian in Xianyang Prefecture. In Henan Province eight counties as follows: Xincai, Pingyu, and Shangcai counties in Zhumadian Prefecture; Fanxian, Taiqian, and Changyuan counties in Anyang Prefecture; Fengqiu in Xinxiang Prefecture; and Xiangcheng in Zhoukou Prefecture. In Fujian, eight counties as follows: Huian, Anqi, and Yongding in Pujiang Prefecture; Ningde, Shouning, Luoyuan, and Lianjiang in Ningde Prefecture; and Putian county in Putian. In Hebei, seven counties as follows: Weixian in Handan Prefecture; Xinhe, Weixian, Julu, Pingxiang, Guangzong, and Tangxian counties in Jingtai Prefecture. In Shanxi, seven counties as follows: Liulin, Linxian, and Fangshan counties in Luliang Prefecture; Leifan in Taiyuan City; Jingle in Xinxian Prefecture; Puxian and Fushan in Linfen Prefecture. In Anhui Province, six countie as follows: Lixin, Yingshang, Fuyang, Linquan, Jieshou, and Taihe in Fuyang Prefecture. In Xinjiang, six counties (or municipalities) as follows: Kashgar City, Chishi, and Shufu counties in Kashgar Prefecture; Pishan county in Hetian Prefecture; Atushi County in Kezilesukeerkezi Zhou; and Keping in Akesu Prefecture. In Shandong, five counties as follows: Quancheng, Dongming, and Liangshan in Heze Prefecture; Qingyun County in Dezhou Prefecture; and Lijin County in Huimin Prefecture. In Guangxi Province, three counties as follows: Donglan, Bama, and Duan in Hechi Prefecture. In Ningxia, two counties as follows: Tongxin County in Yinnan Prefecture, and Guyuan County in Guyuan Prefecture. In Sichuan, two counties as follows: Gu lin County in Yibin Prefecture and Yunyang County in Wanxian Prefecture. In Jiangsu, two counties as follows: Dihong and Shuyang counties in Huaiyin Prefecture. In Zhejiang Province, two counties as follows: Yongjia in Wenzhou Prefecture, and Qingtian in Lishui Prefecture. In Nei Monggol, one banner (county) as follows: Yijinhuoluo Banner in Yikezhao League. In Guangdong Province, one county as follows: Dongfang County in the Hainan Administrative District. In Jiangxi, one county as follows: Guangfeng in Shangrao Prefecture.

9432
CSO: 4007/52

SOCIALIST BASIS OF CONTRACTING WITH HOUSEHOLDS DEFENDED

Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese No 9, 23 Sep 81 pp 17-22

[Article by Survey Detachment, Agricultural Finance Department, Ministry of Finance: "A Survey of Jiangxi and Fujian's System of Responsibility of Contracting Work With Individual Households"]

[Article] The basic conclusions we formed from hearing and seeing a large number of situations during our rural economic survey in Jiangxi and Fujian provinces during March and April this year are as follows: In some production teams, putting into effect of a system of responsibility whereby contracts for work are made with individual households, and conformity to the objective laws requiring that production relationships must be suited to the nature of development of productive forces, have aroused the initiative of the peasants and promoted the development of agricultural production. There is a difference in nature between institution of such a system of responsibility and division of the fields for working by individuals on their own in that this system has not changed the nature of the rural collective economy. Some new problems that have arisen following institution of the system of responsibility of contracting for work with individual households which require only a strengthening of leadership and reliance on the masses, and they will not be difficult to solve. Now a particularized account is given below.

1. The System of Responsibility Whereby Contracting for Work is Done with Individual Households Has Been Produced and Developed Under Specific Conditions and Possesses an Objective Inexorability

In Jiangxi Province, we surveyed the situation in two counties primarily. One was Yongxin County in Jian Prefecture, which was one of the main counties where revolutionary bases were located in the Jinggang Mountains at one time and the country in which the famous reorganization at Sanwan was carried out. [At Sanwan in Jiangxi Province, the Chinese Red Army was reorganized after an unsuccessful attempt by Mao Zedong to use "The Autumn Harvest Uprising" in Hunan Province in September 1927 to promote a nationwide insurrection.] The other was Yichun County in Yichun Prefecture, which is one of the counties in Jiangxi Province in which grain production and diversification have been done rather well. In 1979, this county was first in the country in total output of tea oil. The systems of responsibility for production are currently greatly different in these two counties. In Yongxin, about 80 percent of production teams have put into effect a system of responsibility whereby work is contracted to individual households. In Yichun, most production teams have

put into effect systems of responsibility that link calculation of remuneration to production with specialized contracting or holding the workforce responsible for output. Though contracting for work with individual households forms the principal form of the system of responsibility in Yongxin, some production teams continue to maintain other forms of a system of responsibility. Why is it that various production teams within a county, or commune, or even a production brigade put into effect different individual systems of responsibility for production? This is decided primarily by differing levels of development of productive forces or is closely related to differing levels of administration and management, and different levels of distribution of collective earnings. Take Yongxin as an example. Natural conditions in this county are far from poor. Except for two communes, problems in water conservancy have been substantially solved. Since Liberation, total grain output has increased almost twofold; grain consumption per capita is generally between 500 and 600 jin; and food, clothing, and shelter are not a problem. Nevertheless, mass sentiment for practicing a system of responsibility whereby contracting for work was done with individual households was very strong, and no one could stop it. At first the Prefecture CCP Committee intended to limit the area for contracting of work with individual households to within 20 percent, with the result that it had expanded to around 80 percent within the short space of 1 or 2 months. The swiftness of developments took every echelon of leadership by surprise. The main reasons for the expansion were as follows: Because of "leftist" influence, this county's economy has been devoted solely to grain production. Furthermore, collective management and administration has been poor, and egalitariansism in distributions has been rather severe, the level of commune member income being consistently very low (for many years income distributed by the collective averaging only between 50 and 60 yuan per capita in the county)! As a result, the state of affairs was in urgent need of change and a new form of administration and management had to be found. The situation in a commune in that county called Tailing Commune very well illustrates the problems.

Tailing is located in the hills where, ever since the problem of water for fields was solved in 1974, grain output has increased over the years, with consumption grain now averaging more than 700 jin per capita. Last year only 12 production teams in the entire commune practiced contracting for work with individual households, but this year almost every production team has put contracting for work with individual households into effect. As to why the area of this commune covered by contracting for work with individual households expanded so fast, the survey reveals the following several reasons:

(1) Because diversification was poor, despite the fairly rapid growth of grain production, in 1979 disbursements by the collective to commune members averaged a net of only 68.10 yuan per capita, barely enough to pay for grain to eat. Individuals had to solve as best they could the problem of other necessary living expenses.

(2) For a long time, problems involving waste of labor forces and the practice of egalitarianism in distribution remained unsolved. Though numerous production teams put into effect a system of responsibility whereby contracts for production were made with individual teams during the last 2 years; nevertheless, several households were not that sanguine about such a system of responsibility. If the team leader told everybody to be at work by 8 o'clock, at 9 o'clock there would still be some who had not reached the fields. As a result of dillydallying, only 5 to 6 hours of work was done each day, and the rate of efficiency was very low. The former political critiques of workpoints that resulted in "critique till one's

stomach became empty, critique till weeds grew in the fields, and critique until everyone wanted to go to sleep! though abolished, nevertheless inequitable distribution practices still existed whereby "males got 10 workpoints while females got 7 workpoints in the practice of unequal rewards for equal work, and egalitarianism in distributions.

(3) No firm link between collective benefits and individual benefits, with no one caring when public property was damaged. Livestock and poultry raised by commune member families roamed everywhere, and if anyone saw them when they ate production team grain in the fields in front of or behind a house, they would only shout, "Hey! An ox is eating the grain!" Were a production team leader to ask why they had not chased the animal away, they would say, "That job wasn't assigned to me."

(4) Financial management was not democratic, a small number of cadres indulging themselves in food and drink. Some production teams told of how, in the course of a year, production team cadres used various pretext for eating and drinking between 500 and 600 yuan worth, and this money all came out of the hides of the masses.

In order to eliminate these abuses, last year a small number of production teams followed the experiences of other places in starting up a system of responsibility of contracting for work with individual households. This produced increased output by every team; every team increased its contributions to the state; every team increased the accumulations of the collective, and every household increased its income for a fine result. This exerted a very great pull on surrounding production teams. We paid a visit on food to one such team, the Fourth Production Team of Changyuan Brigade where we were very happy upon hearing their briefings.

The Changyuan Fourth Production Team is a small hamlet consisting of only 12 households with a population of slightly more than 70. It has 102 mu of cultivated land from which a grain harvest totaling 86,000 jin, or yields of 843 jin per mu, were harvested in 1979, each person averaging an output of 1,211 jin of grain. After turning over 3,365 jin of grain to the state, selling 7,400 jin of excess grain (of which the procurement grain base figure was 3,800 jin and 3,600 jin was procurement in excess of quota), and after retaining seed grain, grain for livestock feed, and other grain for collective use, consumption grain remaining averaged somewhat more than 800 jin per capita. In 1980, this team put into effect a system of responsibility of contracting work with individual households, and grain output totaled 102,000 jin, an 18.6 percent increase over the previous year. Grain sale quotas to the state were fulfilled to the letter, not a jin being owed. In 1980, production team grain sales to the state in excess of procurement quota amounted to 28,100 jin, a 6.8 fold increase over 1979. Formerly 9 out of the 12 households had overspent, so the production team owed the bank more than 1,800 yuan. All of this was repaid in 1980. Following institution of the system of responsibility of contracting work with individual households, both households with a large amount of labor and households with little labor increased their incomes, the extent of increase being generally more than double. Here we will provide examples of two households of commune members. The first is the household of Xiao Binzhang [5135 2430 4545], a production team leader, which has a large workforce. The second is the household of commune member Liu Toumei [0491 7333 1188], where the workforce is small.

Xiao Binzhang's household consists of husband and wife, eight children, and an old father, for whom he and his brother jointly provide support, for a total of 10.5 people, 4 of whom work. In 1980, his family contracted the farming of 15 mu of land from which they realized a harvest of somewhat more than 18,000 jin (self-assessing somewhat more than 16,000 jin), for yields of 1,233 jin per mu, which was 383 jin higher than the 850 jin output fixed at the time of contracting the work. This income was distributed as follows:

1. Grain delivered to the state amounting to 495 jin (33 jin per mu), or 2.67 percent of output and having a value of 47 yuan.

2. Excess grain sold to the state amounting to 1,200 jin (80 jin per mu), or 6.49 percent of output and having a value of 138 yuan.

3. Grain sold in excess of state procurement amounting to 7,200 jin (480 jin per mu) amounting to 38.9 percent of total output and vlaued at 1,245.60 yuan.

4. Grain tendered to production team for various collective withholdings amounting to 1,500 jin (100 jin per mu), or 8.14 percent of total output valued at 142.50 yuan.

5. Grain retained as seeds or for use as livestock feed, 800 jin (76 jin per mu), or 4.33 percent valued at 76 yuan.

6. Grain retained for consumption amounting to 7,300 jin (an average 695 jin per person), or 39.47 percent of total output and valued at 693.50 yuan.

Of the above six categories totaling 18,495 jin of grain valued at 2,342.60 yuan (the value of each category being calculated on the basis of different prices, e.g., grain tendered the state at moderate list price for grain, grain in excess of procurement at ad valorem, and consumption grain, seeds, livestock feed grain, and grain tendered to the production team as part of collective withholdings according to the internal unchanged price), the portion of grain turned over to the state and tendered to the production team as part of collective withholdings totaled 10.81 percent, and the portion kept for themselves amounted to 89.19 percent for a total value of 2,153 yuan. Another 250 yuan or so was deducted a production costs (seeds and livestock feed amounting to 800 jin and valued at 76 yuan; purchase of 1,000 jin of ammonium carbonate at a cost of 93 yuan; purchase of 1,100 jin of calcium potassium phosphate at a cost of 66 yuan; purchase of pesticide for 12 yuan; and farmyard manure and other miscellaneous expenses of a little more than 100 yuan), for a net income of somewhat more than 1,900 yuan or about an average of 180 yuan per person, or an increase of about 1.3 fold over 1979.

While Xiao Binzhang's family was devoting most of its energies to production in the fields it had contracted to work and striving for increased output, increased earnings, and an increased contribution (the grain in excess of procurement that his family sold was double the amount of grain in excess of procurement sold by the entire production team in 1979), it was rationally planning the labor done by adults, children, and the part-time work force in the family to make fullest use of time on the family's private plot and in household sideline occupations. In 1980, from his family's private plot (including a small tract of wasteland allowed by policy), a harvest of 300 jin of peanuts, 90 jin of soybeans, 30 jin of sesame, and 1,200 jin of sweet potatoes was obtained. In addition, the family raised a

flock of 80 ducks and sold one fat hog. This plus income from the fruit trees in front of and behind his house, and income his sons earned during the slack season in farming by going outside the team to labor brought an annual income totaling about 1,400 yuan, or a net income of somewhat more than 1,100 following deduction of 20 percent for production expenses, making an average of 105 yuan per person. Income from contracting collective fields and income from household sideline occupations amounted to about an average of 285 yuan per person, income from the former source, therefore, being 63.3 percent of the total, and income from the latter being 36.7 percent.

In the household of commune member Liu Toumei, where the workforce was small, the husband worked on a forest farm, while the wife worked at home and took care of seven children, the oldest of whom was 18 and the youngest of whom was 3. In 1979, they obtained a basic ration of consumption grain of 3,200 jin from the production team for which they owed the commune an unpaid balance of 188 yuan. In 1980, they contracted the farming of 7 mu of land. Since she was unable to plow the fields or cultivate them, the production team organized a work exchange with her to help her family out of its hardship situation. Her husband would come home on vacation for several days each month, when he and close friends would help out. They threshed 7,030 jin of paddy that year, and the income from this, plus some from having done a little work on sideline occupations, brought their total income to 1,200 yuan, or an average of 150 yuan per person, a 1.5 fold increase over 1979. After tendering grain to the state and to the collective as a portion of withholdings, and after keeping seed grain, grain for livestock feed, and consumption grain, they sold 2,200 jin of surplus grain and grain in excess of procurement quota, making 386.9 yuan, and paid off the balance owing the production team.

Because of the several years of increased output following institution of contracting for work with individual households, the incomes of commune members in this brigade again increased tremendously. Last year two households built two 3-story buildings (a total of 12 rooms upstairs and downstairs in each house), and in 1981, another four households will build new houses.

The reason so many production teams that put contracting for work with individual households into effect are able to show fine accomplishments in all around development of grain production, diversified production, collective production, and household sideline occupation production is inseparable from the arousal of commune member enthusiasm for work, and enthusiasm for scientific farming that this kind of a system of responsibility arouses. Ninggang is a place where, in former years, Comrade Mao Zedong and Comrade Zhude victoriously joined forces. The situation here is much the same as in Yongxin, and 80 percent of the production teams here have also put into effect a system of responsibility fo contracting labor with individual households. According to a responsible comrade in the County CCP Committee, after instituting his system of responsibility, numerous new phenomena occurred. First was a very great quickening in the pace of spring planting. In former years, it took about 5 days to complete this farmwork, but this year it was finished in less than 2 days. Second is an upward surge in peasant enthusiasm for agricultural science and technology. Superior varieties were rapidly sold out in county seed stations. In order to hear weather forecasts and talks on agricultural technology, sales to peasants of radios spurted. The homes of commune farm technicians are like markets with more business than can be attended to. Third was serious attention to increasing the quality of fertilizer, particularly of organic fertilizer. Whether in city or countryside, any hog or ox droppings along the roads were picked

up as clean as can be. Fourth was efforts to conserve on production expenses and less making of bank loans. It is predicted that this year's farm loans will decrease from last year. Responsible comrades in the County CCP Committee also told us that an overwhelming majority of peasants and production team cadres welcomed the system of responsibility of contracting work with individual households. Today the misgivings of all may be summarized in a single sentence: "Commune members fear change, and cadres fear making mistakes." They hope that the history of the past "making policies in hardship times only to change those policies when circumstances change and to criticize those policies when a campaign comes along" will not be repeated.

Implementation of systems of agricultural production touches upon the personal welfare of the peasants. The kind of system of responsibility to be instituted must be determined by democratic discussion by the masses in each production team on the basis of their individual situation. In no case can there be a situation like that of the past when changes were made in production relationships through orders passed down from higher authority in exercise of arbitrary uniformity. Though production teams all around them are practicing contracting for work with individual households, some production teams, acting in accordance with the desires of the majority of the people, have put into effect other systems of responsibility. This is understandable, and no leaders may exert any form of pressure on them to change their wills. For example, the production teams belonging to the Longxing Production Brigade in Longmen Commune and to the Puqian Production Brigade in Puqian Commune in Yongxing County, which we visited, belong in this category. After arousing the masses to discussion, one continued to put into effect a system of responsibility of contracting for production with teams, and the other continued to practice a system of responsibility of uniform accounting fixed quota management, and contracting for work with teams. The reasons these two production teams decided to do things this way have the following common characteristics: First, levels of collective production, levels of administration and management, and levels of commune member incomes are all relatively high, and most of the masses are fairly satisfied with this situation. In Longxing Production Brigade, for example, collective distributions of consumption grain in 1980 averaged more than 700 jin per person, and collectively distributed income averaged somewhat more than 140 yuan per person (including distribution of excess output in the team). In the Puqian Production Brigade, consumption grain averaged somewhat more than 600 jin per person in 1980, and collectively distributed income averaged 123 yuan per person. Second, water conservation projects for farmlands have been well provided, and grain yields per mu are high. Both the Longxing and the Puqian Production Brigades have built running irrigation systems and have instituted garden-style cultivation of farmland for yields averaging 1,200 to 1,400 jin per mu. The masses fear that with contracting for work with individual households, the existing farmland water conservation facilities will be hurt, impairing grain production. Third, both these production brigades are at the end of irrigation ditches, so when there is drought, they have to hold joint discussions with the brigade and other communes and brigades involved on how water is to be allocated and used. Before Liberation, Longxing Production Brigade and hamlets upstream had armed conflict over water rights in which several score people were killed or wounded, and nobody wants to repeat this painful lesson of history. Fourth, collective enterprises and diversified operations are being run fairly well and form the major sources of commune member income. The Puqian Production Brigade averages only 0.7 mu of fields per person, but each worker averages 1.62 yuan per day for his work. This is primarily because while practicing intensive cultivation and vigorously increasing per unit yields of grain, they

benefit from their geography which lies close to the suburbs, production brigades operating a vegetable farm, adapting general methods to local situations to develop crops from which economic benefits are high such as vegetables, melons and fruits, and sugarcane. They also operate a processing plant that does miltiple operations (including the making of bencurd, pressing of oil, grinding rice, and teasing cotton), as well as a small silkworm mulberry farm. Income from these enterprises passed down to production teams last year amounted to more than 30,000 yuan, or an average of 26.20 yuan per capita. The current task as far as this kind of production team is concerned is to guide them in further improvement and perfection of their existing system of responsibility to make better use of the superiority of collective operations. Longxing Production Brigade intention to hold an economic competition among production teams practicing a system of responsibility with contracting of work with individual households, and this should be encouraged.

2. A System of Responsibility of Contracting Work With Individual Households Differs in Nature From Division of the Fields For Working By Individuals

In order to clarify this question, it is necessary first of all to make a categorical statement about what is meant by contracting work with individual households and how to practice contracting work with individual households on the basis of survey data.

Contracting work with individual households means that production teams contract with individual households for the farming of collective farmland on the basis of the principle of population that eats rural grain, or a combination of the grain eating population and the size of the workforce. All income derived from contracting the farming of fields belongs to the commune members family except for grain tendered as taxes to the state, and various portions retained by the collective, which are turned over to the production team. This income belonging to commune member families may be freely used by commune member families once prescribed procurement grain (including excess procurement grain) sales quotas have been fulfilled, and once other agricultural byproduct sales and requisition procurement quotas have been fulfilled. Amount of grain to be tendered to the state as taxes and procurement grain are apportioned in accordance with quotas handed down by higher authority and according to the quantity and quality of fields that commune member households have contracted to farm. Collective withholdings generally consist of public accumulation funds, public welfare funds (used for the households enjoying the five guarantees [childless and inform old persons who are guaranteed food, clothing, medical care, housing and burial expenses by the people's commune], dependents of martyrs and military personnel, and disabled servicemen to provide them living subsidies and hardship subsidies), as well as subsidies to production team cadres, to teachers hired by the people, doctors hired by the people, for militia training, and planned parenthood. Some production teams also withhold some grain for workers collectively used by production teams for the building of small scale farmland water conservancy projects or expenses for pumping water to fight drought. The total sum of withholdings by the collective tendered to production teams is generally maintained at or slightly lower than their former levels, and are apportioned according to the quantity and quality of fields for which a household contracts the farming. Requisition procurement quotas and quotas for collective withholdings to be paid to higher authority are all approved by commune member meetings, and are set down in agreements signed by production teams and commune members. Plow oxen and farm implements such as plows and harrows are contracted to households for use after being assigned a value, in most cases. Generally when three or four households use a single plow ox in common, the method of caring for the animal will be to take turns in feeding it.

In some cases specialized households are responsible for feeding with proper remuneration being paid by the other individual households. No matter the method use for feeding the animal, should the plow ox's physical condition obviously deteriorate, or some abnormal accident resulting in its death take place, compensation must be paid the collective according to the assigned value. Selling of plow oxen and farm implements to user households is also practiced, the price received being income for the collective. Hand tractors, diesel engines, water pumps, rice milling machines, oil pressing machines, and such farm machines, as well as machinery for the processing of agricultural byproducts are generally under the unified administration of production teams. If they are contracted out to any specialized workers for management or use, reasonable remuneration must be paid on the basis of quantity and quality of work done. When a production team designates a particular person responsible for unified management of collectively owned water conservancy facilities, his remuneration may be paid for out of withholdings made by the collective or shared by households who benefit. The way of doing things is not standardized.

Once a system of responsibility of contracting work with individual households has been instituted, does the production team still exist? Do production team cadres still work? On the basis of what we saw in Jiangxi and Fujian, an affirmative answer can be given to these questions. The question currently requiring study is though the role of production team cadres in collective guidance of production is less once a system of responsibility of contracting work with individual households has been instituted, their executive management and economic management functions are intensified. How to solve this problem awaits experience and summary. In our opinion, Shanqi Production Brigade of Zhangjiang Commune in Changle County, Fujian Province has done a fairly good job in this regard. Most of the cultivated land in Shanqi Brigade is drylands, all of which have been contracted to individual households for farming. They have formulated a principle on the basis of changes that have taken place in the objective situation about the future tasks of production brigades and production teams. Production brigades will be responsible mostly for attention to the following matters: (1) Implementation of various government policies and laws, supervising and urging fulfillment by each production team of requisition purchase and quota purchase quotas; (2) Using requirements of state plans to draw up planting plans for the entire brigade and guiding the production of each production team; (3) Organizing farmland water conservance construction within the production brigade; (4) Attention to social care and relief of dependents of martyrs and servicemen and households enjoying the five guarantees; (5) Conducting training and guidance in agricultural technology for production teams; (6) Operation of grain processing plants serving the production life of commune members throughout the brigade; and (7) Acting as a bridge between foreign trade departments and production teams, helping each of them with the procurement and marketing of processed agricultural byproducts supplied for export. The principal responsibilities of production teams are: (1) Responsibility for signing contracts with commune members and overseeing and urging commune members to live up to contracts, assuring fulfillment of state requisition procurement and quota procurement quotas; (2) Coordination of the planting plans of each household in accordance with production brigade planting plans and the production team's water conservancy situation; (3) Helping each household coordinate planning and use of plow oxen and farm implements, solving conflicts that may arise; (4) Helping hardship households solve some real problems in the production process.

On the basis of the above facts, we can appreciate that the system of responsibility of contracting for work with individual households presently practiced by some production teams is in no way a division of the land to work it on one's own. What is meant by working on one's own? Working on one's own is of two kinds. One is the kind that existed before Liberation. Working on one's own at that time was founded on private ownership, and most of the impoverished peasants worked under the cruel exploitation of landlords and rich peasants. The other kind was practiced right after land reform. In the working on one's own of this period, though the feudal exploitation system has been abolished, it was still founded on the system of private ownership. And there were no collective safeguards in the villages. The system of responsibility of contracting work with individual households being practiced today by some production teams has nothing in common with these two kinds of working on one's own. First of all, in the system of ownership, the principle of public ownership of the basic means of production has been adhered to. Land, large and medium size farm machines and tools, and plow oxen are still under collective ownership; commune members contracting farming or contracting for their operation have only the right to use these means of production; they do not have ownership rights, buying and selling rights, or rental rights. In the area of distribution of earnings, the principle of concern about the welfare of the state, the collective, and the individual has been maintained. In the former unified accounting used by production teams, the method of calculating earnings and the sequence for making distributions was as follows: Total income from collective operations - total collective production costs and management costs = income that may be distributed. Income that may be distributed - state revenue - collective withholdings (including public accumulation funds, public welfare funds, and other withholdings) = net income distributed to commune members. Though there is not further unified accounting by production teams under the system of contracting work with individual households, calculation and distribution of earnings continues objectively to exist; there is no change in its nature; it has only been greatly simplified. The method of accounting and sequence of distribution is as follows: The total income obtained by all households contracting work from the contracting of farming - revenue funds paid to the state - various withholdings turned over to the collective (in addition to the former ones, production team management costs have been added) - total disbursements for production costs by each household = net income for commune members. Third, it better carries out the principle of distribution according to labor for the portion distributed to commune members. Formerly the principal bases for production team unified distributions was workpoints. Because of the failure to give equal compensation for equal work, egalitarianism, and other unfair practices in the appriasal of work done and the recording the workpoints for it, instances in which one worked much and received little or worked little and received much commonly occurred. Following institution of the system of responsibility for production with contracting of work with individual households, except for portions turned over to the state or to the collective, all else reverted to one's self. If one worked hard, produced a lot and had much earnings, he received more. Conversely, he received less, and the various former abuses were swept away with one stroke.

The system of responsibility for agricultural production is a concrete embodiment of rural production relationships. In making a scientific analysis of the nature of a production relationship in accordance with Marxist concepts, one must look at three principle conditions. One is the form of ownership of the means of production. The second is the position and mutual relationship in production of different social groups. Third is the form of distribution of products. Of these conditions, ownership of the means of production forms the foundation of production relationships, and it determines the nature of production relationships. The

system of responsibility whereby contracts for work are made with individual households adheres to public ownership of the basic means of production; the relationship among workers in each household in production teams is one of equality and mutual cooperation; distribution of earnings from labor takes into account the welfare of the state, the collective, and individuals, and is an implementation of the principle of distributions according to work. This all shows that the system of responsibility of contracting for work with individual households is, like other rural systems of responsibility for production, socialist in nature, and is a concrete form of production relationships internal to the agricultural collective economy. This is an undeniable fact.

3. New Problems That Have Arisen in the Wake of Implementation of a System of Responsibility of Contracting for Work With Individual Households Are Not Difficult to Solve

Our study of the objective conditions whereby a system of responsibility of contracting for work with individual households in some production teams has been able to become established and developed, and our affirmation that this system differs from the division of fields and working them alone is not to say in any way that after this system of responsibility is put into effect that there will not be some new problems requiring diligent study and solution. What people are currently concerned above, in addition to that which has been mentioned in the foregoing, is largely the following. Following institution of a system of responsibility of contracting work with individual households, will fulfillment of the state's requisition procurement and quota procurement quotas be really assured? Will it be really possible to help solve the living hardships of dependents of martyrs and servicemen, and of households enjoying the five guarantees? Will existing farmland water conservancy projects and collective property continue to be preserved and continue to play a role? Will construction for agriculture continue to be done henceforth? Will commune and brigade enterprises already in operation collapse? Will the dependents in rural villages of cadres, staff and workers in cities get any help in solving hardships resulting from their lack of labor? Will it be possible to continue control over planned parenthood? It is understood that most production teams have solved these problems fairly well; some production teams have not yet made sufficient provisions, and local leaders are in process of further study of means to handle them. In the survey process, the understanding we derived was that before institution of a system of responsibility for production in agriculture, a large pile of problems existed in the administration and management of production teams. Once a system of responsibility for production was instituted, and particularly once the system of responsibility of contracting work with individual households was instituted, numerous new problems would surely appear and this was not strange at all. The key lies in each echelon of CCP committees and government truly strengthening leadership rather than abandoning leadership in cadres at every level in rural villages standing fast at their posts and putting effort into their work rather than no one taking responsibility; and true confidence in the masses and reliance on the masses rather than being divorced from the masses. Then ways can be found to solve all these problems. In the collection of agricultural taxes, for example, in order to guarantee fulfillment of collection tasks, some production teams layed down various concrete methods for collections in addition to the amounts to be paid provided for in contracts with each household. These methods included uniform organization by the production team of individual households following the grain harvest to go to grain stations to make payment; requiring each household to complete payment at the stipulated time the

production team having the authority to use other administrative measures including taking back a part of the fields for which work was contracted in case of unreasonable delays in making payment, and failure to heed instruction to do so. In addition to providing for a source of expenses and grain from the sums withheld by the collective to provide for the livelihood of the households enjoying five guarantees, some production teams collectively set norms for the amount of grain and living expenses to be accorded each person each year, as well as the quantity of pork to be supplied during the traditional festivals of New Years, Dragon Boat, and Mid-autumn. For the repair of bridges and roads and for small water conservation projects within the purview of the production team and providing collective benefits, some production teams used the method of each member of the workforce being required to do a certain amount of obligatory labor, while others figured out the amount of labor required annually, making collective withholdings to cover it and then paying the workers appropriate compensation at the time they performed the work. In the households of cadres, staff and workers who suffered for lack of workers, in addition to the aforestated various means of solution, some production teams used other measures. For example, they might permit dependents of cadres, staff and workers who lacked manpower to contract the farming of consumption grain fields only. In cases where there was genuine lack of manpower, production teams would turn over to households with a surplus of labor the fields that should be contracted to labor deficient households. The households that actually farmed these fields would then sell consumption grain to the labor-short families of cadres, staff and workers at unchanging prices set within the production team. Will commune and brigade enterprises collapse following institution of contracting for work with individual households? This requires concrete analysis. If there is a local surplus of labor, the direction of enterprise development is correct, and there are no problems in production, supply, or marketing and operations turn a profit, the commune members of commune and brigade enterprises receiving cash income monthly or self-sufficiency with some surplus attained with no reliance on indebtedness to production teams or egalitarian and indiscriminate transfer of resources from production teams to survive, the enterprise is likely to continue to develop. Conversely, it may collapse. Such a collapse should be regarded as conforming to economic laws. The situation in Jiangsu and Fujian provinces show most enterprises to be in the former category and a minority in the latter.

Contracting for work with individual households is a kind of system of responsibility for production within the socialist collective agricultural economy, yet since it is founded in families and households as the operating units, it must inevitable be limited in nature. If it is badly done, it can become what some comrades fear, namely sliding along the road of being collective in name but working on one's own in practice. But this is by no means an inevitable outcome in the implementation of a system of responsibility of contracting for work with individual households; it is rather the outcome of abandonment of leadership and allowing things to slide. If one were to ascribe a danger to the practice of contracting for work with individual households, that danger would be abandonment of leadership. Consequently, after contracting for work with individual households has been instituted, party and government leaders at all echelons must thoroughly check and study, summarize new experiences, resolve new problems, strengthen leadership, and then new problems that arise will not be difficult to solve.

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MORE HOUSES BEING BUILT IN RURAL AREAS

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[Text] Beijing, November 7 (XINHUA)--Around 1.65 million peasant families in Shandong, a major agricultural province, have built new housing so far this year.

This accounts for about 11 percent of Shandong's peasant households. New rural housing has risen 130 percent over 1980, according to provincial authorities.

Rural housing is also going up in other provinces. In the area around Dalian, Liaoning Province, more and more peasants have built new houses this year. As a result, 600,000 local peasant families now average about 60 square metres of floor space, much larger than the average for a family of Dalian urban dwellers.

A recent survey conducted by the All-China Federation of Supply and Marketing Cooperatives indicates that close to 10 percent of the nation's peasant families are planning to build new houses this winter.

Production of building materials such as bricks, tiles, timber, reinforcing bars, glass, paint and hardware has increased remarkably. Concrete components, steel roof trusses and steel windows are being manufactured to substitute for timber and other scarce building materials.

In Shandong, overall plans for housing expansion have been worked out in over half of the province's production brigades. One thousand seven hundred technicians have been trained to give the peasants help with designing and construction problems. Some 2,500 building teams have been organized in central Shandong's Weifang Prefecture alone.

CSO: 4020/25

GUIDANCE GIVEN FOR GATHERING WILD PLANTS FOR INDUSTRIAL USES

Beijing ZHONGGUO CAIMO BAO [CHINA FINANCE AND TRADE JOURNAL] in Chinese 10 Sep 81 p 1

[Article: "All-China Federation of Supply and Marketing Cooperatives Officers-in-Charge Talks About Problems Related to "Minor Autumn Harvest"]

[Text] This is the busy season for the "minor autumn harvest." According to representative samplings done in some provinces, except for some specific varieties, the overwhelming majority of "minor autumn harvest" products have grown well and a bumper harvest seems in the offing this year. Recently, officers-in-charge at the All-China Federation of Supply and Marketing Cooperatives expressed himself to correspondents of this newspaper on matters pertinent to how to do a good job of the "minor autumn harvest" as follows:

This year's harvest of grain and economic crops will be a bumper one, so why make a major effort on the "minor autumn harvest"?

Despite the steady development of agricultural production, numerous industrial raw materials are currently still very much lacking. Full use of wild plants and such natural resources in order to effect savings of some grain and other raw materials is something that cannot be overlooked. Even though grain and economic crops will see much more development in future, use of wild sources will still have to be given attention. China has abundant wild plant resources, several thousand varieties being currently useable. Most of these wild resources possess great utility. It is estimated that the "minor autumn harvest" in various parts of China provided more than 12 million tons of industrial raw materials of all kinds between 1972 and 1980, for a saving of 2.3 billion jin of grain, a saving of 4.31 million cubic meters of lumber, and an increase in peasant income of more than 12 billion yuan. It may be seen that active collection and use of "minor autumn harvest" products is a job that benefits both the country and the people. While giving attention to the "major autumn harvest," we must not slacken attention to the "minor autumn harvest."

Where should the focus of attention be placed in this year's expansion of the use of "minor autumn harvest" products?

First of all, it is necessary to give attention to expansion of staple varieties that are used in fairly great and concentrated quantities: Things such as fibrous raw materials like manggan [5345 4427] and Chinese alpine rush [Eulaliopsis binata];

acorns as a source of starch, etc. Secondly, conditions should be created for expansion of the use of other non-staple varieties such as wild raw materials for the chemical industry, aromatic oils, and edible wild herbs from the mountains for export, etc. Places not used at all or used very little in the past should be actively developed this year, every effort being made to use items locally or nearby. Places already used should further expand use.

How can industrial enterprise processing of "minor autumn harvest" products for use be promoted?

The experience of various places shows the following major ways of organizing the processing for use of "minor autumn harvest" products: First is products in large amounts that are concentrated, the source of supply for which is consistent, that require fairly high technological production equipment, and which the local area would find it difficult to use. Examples are manggan and Chinese alpine rush, which are used in the manufacture of paper, or acorns for processing into adhesives and production of building materials, or acorn starch for sizing, etc. Industrial departments should be spurred to use them. Second, is varieties that are fairly easy to gather, the production technology for which is simple, and which are rather perishable, for example, things such as aromatic raw materials requiring distillation processing, and use of small wild fruits that rot easily. Commune and brigade enterprises have to organize to make use of these. Third, is the pressing of oil from dispersed oil-bearing plants, and the use of wild fruits for processing into sparkling wines, fruit liquors, fruit juices, dried fruits, and fruit pastes. Supply and marketing cooperatives and grain departments must be organized for combined purchase and marketing of these things, themselves building plants that can process them for use. Fourth, is the organization of commune and brigade enterprises in out-of-the-way mountain regions, where transportation is difficult, for the preliminary processing of semi-finished products to be supplied to light industrial departments for their use.

In order to promote expansion in the use of wildlife resources, user units have to be given appropriate subsidies. Provincial financial organs subsidize transportation costs for "minor autumn harvest" items in mountain regions that have been designated by the State Council as local mountain products for purchase and transportation from out-of-the-way mountain regions. Policies providing for the payment of subsidies in fixed amounts for individual kinds of items, when enterprises sustain losses temporarily from the use of raw materials from the wilds, should be continued to be implemented.

Doing a good job of processing of such items for use requires strengthening of applied science work. Supply and marketing cooperatives and scientific research units everywhere should closely cooperate, consolidate traditional uses for such things and develop new ways of using them to steadily increase the utility of these productions, and do a good job of using them.

Under this year's new circumstances, how can supply and marketing cooperatives do a good job of "minor autumn harvest" product procurement work?

As a result of the implementation this year in rural villages of various forms of a system of responsibility for production, the gathering of "minor autumn harvest" productions is everywhere performed, for the most part, as a household sideline ocupation done by individual commune members. Therefore, supply and marketing

cooperations should intensify guidance for production so as to avoid blind production. At the same time, the masses of commune members should be educated in the sensible collection and use of wild plants to prevent destruction of such resources. Procurement work should aim at the surrendering of these plants for sale by thousands and thousands of household; procurement methods should be improved; grassroots procurement forces should be enhanced; and sales promotion work should be intensified at the same time.

9432
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VICE MINISTER OF AGRICULTURE OUTLINES ACCOUNTING PROCEDURES

Beijing GONGSHE CAIWU [COMMUNE FINANCIAL AFFAIRS] in Chinese No 8, 6 Aug 81 pp 14-27

[Article: Vice Minister of Agriculture, Wang Changbo's [3769 1603 2672] Speech Before National Meeting on Commune Finances and Distribution]

[Text] The Ministry of Agriculture held a national meeting on commune finances and distribution in Beijing from 3 to 17 June. Vice Minister of Agriculture Wang Changbo made an important speech at this meeting.

Comrade Wang Changbo said that, at the current symposium on finances and distribution, everyone jointly analyzed the 1980 situation in distribution of earnings, exchanged experiences on restructuring of finances, studied fiscal management following institution of various forms of a system of responsibility, and also discussed the founding and perfection of commune administration and management stations, cadre training, and technical designations for farm economy management cadres. Today I want to express some views on problems to be discussed by this meeting, providing them to comrades for their consideration.

1. A Look at the Rural Economic Situation from the Standpoint of Earnings Distributions

In 1980, agricultural production was carried out under severe natural disaster conditions of floods in the south; drought in the north; low temperatures; and rainy, overcast weather. But, because all jurisdictions conscientiously carried into effect the various programs and policies since the Third Plenary Session of the 11th Party Central Committee, steadily eliminated the influence of leftist ideology in agriculture, further emancipated mentality, liberalized policies, and especially because of the implementation of various kinds of systems of responsibility, the initiative of the broad masses of peasants was greatly aroused; and, though grain output declined a little from the 1979 bumper harvest, nevertheless, it was the second largest bumper harvest year since Liberation. Cotton, edible oils, and tea all created all-time high production levels; the three-tier economy of people's communes continued to develop, and diversification and development of commune household sideline industries also developed fairly rapidly. In the making of distributions, the relationship among the state, the collective, and individual commune members was properly readjusted; and, when income from household sideline industries was added to distributions from the collective to individual commune members, their real income increased strikingly. Today, markets are booming; prices are stable; and the situation in the rural economy is truly heartening.

In 1989, collective grain output from people's commune basic accounting units totaled 580.02 billion jin; and, when grain output from commune member private plots; state farms; and from government units, organizations, and commune and brigade enterprises is added to this, it will amount to a little more than the 636.44 billion jin in the State Statistical Bureau report. As a result of the reduction in grain output, state requisition procurement of grain declined by 11.24 billion jin from last year; collectives withheld 11.91 billion jin less, and unified sales by the state, award sales of agricultural by-products, and other grain increased by 5.66 billion jin. Grain distributions to commune members averaged 483 jin, only 5 jin less than in 1979 If grain from private plots and the portion of output in excess of quota not recorded in local statistics are added on, the actual amount of commune member consumption grain becomes no less than in previous years. Though collective grain output fell a little last year, because of the development of diversification, total earnings increased. Earnings from the three tiers of people's communes totaled 175.77 billion yuan, a 6.7 percent increase over the previous year, earnings from the communes increasing 23.1 percent, from production brigades 10.7 percent, and from production teams 1.9 percent. In 1980, income from basic accounting units totaled 125 billion yuan, a 1.3 percent increase over the previous year. Net income (though this terminology is unscientific, since everyone is accustomed to it, it will continue to be called this temporarily) was 82.4 billion yuan, a 0.6 percent increase. Distribution results were as follows: a 4.4 percent decrease from 1979 in state revenues, amounting to net revenue of 4.7 percent; a 10.5 percent decline in withholdings by the collective, amounting to 12.7 percent of net revenues; and a 2.9 percent increase in distributions to commune members, amounting to 82.6 percent of net revenues. Distributions to commune members averaged 86.44 yuan, a 2.31 yuan increase. If money paid to provincial commune members for contributions of manure and wages paid by commune and brigade enterprises are added to this, the total sum commune members received from the collective was 97 yuan. When about 58 yuan of income from commune member household sideline industries is added to this, total income amounts to about 155 yuan.

Provinces, municipalities, and regions in which distribution of collective earnings averaged more than 100 yuan included Beijing, Tianjin, Shanghai, Tibet, Liaoning, Jilin, Heilongjiang, Zhejiang, Qinghai, Xinjiang, Shandong, and Guangdong, for a total of 12. Counties in which distributions averaged more than 300 yuan numbered 22. Production Brigades in which distributions averaged more than 300 yuan numbered 5,569, a 2.4-fold increase over the previous year. Production teams in which distributions averaged more than 100 yuan amounted to 26.1 percent of the total number of production teams.

Even more heartening was the turn for the better in counties that have long been hardship cases. Of the 221 counties in which distributions prior to 1979 averaged less than 50 yuan for 3 consecutive years, striking changes have taken place in the situation of 72; and, in 6 such counties, per capita distributions have averaged more than 100 yuan. As a result of fairly rapid development in Liaocheng, Huimin, Dezhou, and Heze, four prefectures in northwestern Shandong which have long been hardship cases, distributions to commune members rose from 51 yuan in 1979 to 87.4 yuan, exceeding the national average figure. In 171 production brigades there, per capita distributions averaged more than 300 yuan. The masses happily said: "The Party's Third Plenary Session gave us 'the second liberation' in our economy." Additionally, provinces and municipalities that made three big strides 3 years in a

row appeared. For almost 3 years, Beijing per capita income averaged an increase of 83 yuan, Tianjin averaged an increase of 54 yuan, Liaoning and Tibet each averaged an increase of 48 yuan, and Shandong increased by 47 yuan.

2. Existing Problems

Comrade Wang Changbo said, why is it that, for the past 20 years, levels of commune member distributions have not increased rapidly while more than 20 percent of production teams lay in a state of hardship for a long period of time? Just what is the reason for this? The most fundamental reason is the influence of leftist ideology for a long period of time on the guidance of agricultural production and on administration and management, which strictly contravened the law that production relationships must be in accord with the nature of productivity, and which strictly contravened natural laws and economic laws. Politically, criticism and struggle was practiced; economically, egalitarianism and indiscriminate transfer of resources was practiced; organizationally, large in size and collective in nature was practiced; in accumulation and consumption, high accumulations and egalitarianism in distributions to commune members was practiced, which dampened the initiative of the masses. To be specific:

(1) In the single production economy in production, the commodity rate was low. A look at results of final accountings for distributions in 1980 shows agricultural income still amounting to 73.9 percent of total income; income from forestry amountint to 2.4 percent; income from the livestock industry amounting to 3.3 percent; income from sideline occupations amounting to 13.3 percent; income from the fishing industry amounting to 0.9 percent; income from industry (including wages distributed downward) amounting to 2.8 percent; and other income amounting to 3.3 percent. Income from forestry, the livestock industry, fishing industry, industry, and sideline occupations amounted to 26.1 percent of proportional income. Income from sales of commodities accounted for 34.6 percent of total income, and the commodity rate for grain was less than 20 percent. Survey and analysis of 2,347 representative production teams throughout the country show the following: In 381 fairly prosperous teams in which commune member distributions averaged more than 150 yuan per capita, income derived from forestry, the livestock industry, fisheries, industry, and sideline occupations amounted to 42.6 percent of income, and income from sales of commodities accounted for 55.2 percent. In 258 poor production teams in which distributions averaged less than 50 yuan per capita, however, income derived from forestry, the livestock industry, fisheries, industry, and sideline occupations accounted for only 19.5 percent, and income dervied from sales of commodities accounted for 18.5 percent. This shows that, for a long period of time, numerous places did not act in accordance with realities in China, diversification was not diligently developed, and the situation of a single product grain economy was not solved. Because diversification was not well developed, the two great resources, nature and the workforce, could not be put to fullest use; consequently, production did not develop rapidly, and the commodity rate was very low. This is the fundamental reason why levels of distribution to commune members did not rise for a long period of time.

(2) Great expenditures for management with poor economic benefits. In the 20-year period between 1957 and 1976, total income increased 77.6 percent, while expenditures increased 1.2 fold, the speed of increase in expenditures greatly exceeding the speed of increase in earnings. Total earnings in 1980 increased by 1.8 billion

yuan over the previous year, while total expenditures amounted to 1.19 billion yuan more than for 1978, or 66 percent of the increase in earnings. An overwhelming majority of the fruits of a year's hard work was consumed for expenses. For a long time, this was a conspicious contradiction in administration and management. A look at representative surveys of 312 production brigades shows that costs accrued in three ways. One was for chemical fertilizer and farm machines, which accounted for the greatest proportion of costs. Chemical fertilizer and farm machines hold a very important position in agricultural production but, unless used properly, they make for very great waste. According to the survey, expenditures for chemical fertilizer and farm machines accounted for 47 percent of total costs in these brigades. Second was chaotic financial management with great losses and waste. Among the expenditures of these 312 brigades, irregular expenditures accounted for 13.8 percent. Extrapolated for the country as a whole, this would mean irregular expenditures of about 6 billion yuan. Third was numerous burdens of various kinds. The masses said there were "four manys": much contributing of grain and raising of money, much apportioning of quotas, much responsibility for running things placed on the local people, and many cadres. In short, this meant numerous responsibilities for commune members. According to surveys done at many places in every jurisdiction, responsibilities placed on the rural population cost more than 10 yuan per capita annually, at the least, and as much as several tens of yuan. Because costs were great and economic benefits poor, peasant earnings were scant. The peasants in Hui County, Henan Province said: "It is like carrying a fine-toothed rake in one's arms while carrying a bottomless basket on one's back--much leaks away and little remains."

(3) A serious shortage of production capital and an extremely serious situation of outside units squeezing away production team capital; commune member debts for overspending continuing to mount, adding up to a total overspending of 7.4 billion yuan, a 4.5 percent increase over the previous year, which impaired production and distributions. According to statistics from capital balance sheets for 23 provinces and municipalities as of the end of 1980, use of production team capital by outside units amounted to 11.3 billion yuan; and commune members owed debts of 7.4 billion yuan to production teams. Because of the pressures on production team capital, production teams had no choice but to seek loans from banks and credit cooperatives; and outstanding balances owing to banks and credit cooperatives at year's end amounted to 6.87 billion yuan. Calculating on the basis of interest rates for bank loans, production teams were annually paying almost 300 million yuan in interest on behalf of outside units. This is equivalent to the price of 2 billion jin of grain.

(4) In the handling of the relationship between accumulations and consumption, the problem of high accumulations existed. Looked at in terms of the more than 20-year period from 1957 to 1980, a wide disparity existed in the proportion of collective withholdings and increases in commune members' distributions. In 1980, total earnings were 2.4 times what they had been in 1957; but collective withholdings increased 3.6 fold while distributions to commune members averaged a 1.1-fold increase per capita, for an average increase of only 1.80 yuan per capita per year. Use of the method of limiting commune member living expenses increased accumulations. Unanalyzed espousal of "more deductions and fewer allocations," "average distributions may not exceed 150 yuan per capita," "consumption grain may not exceed 500 jin," and "the value of a day's labor may not exceed 1.5 yuan" greatly hurt every commune and brigade. Since the Third Plenary Session, as a result of the implementation of various agricultural policies, most notably the systems of production responsibility,

production has developed farily rapidly, the prices of agricultural by-products have gone up, and this plus proper readjustment of the three relationships [among the etate, the collective, and the individual commune members] has meant clear increases in distributions to commune members. In 1978, average per capita income increased by 9.24 yuan over 1977, increased to 9.52 yuan in 1979, and increased by 2.31 yuan in 1980. These have been the 3 years of greatest increase in distibutions to the peasants since cooperativization. Nevertheless, we must realize that the increases in commune member income during these 2 or 3 years resulted, to a fairly large extent from increases in prices for agricultural by-products. Large increases in the prices paid for agricultural by-products are not in the offing for the next several years, so failure to give close attention to the development of diversification, failure to increase the economic effectiveness of the collective economy, or failure to give close attention to the proportional relationship between accumulation and consumption will mean the enthusiasm of the masses may continue to be impaired.

3. Several Ideas

Comrade Wang Changbo said that, if new situations in rural development are to be met, there must be further study devoted to the new circumstances and solutions to new problems. Extremely close attention must be given to administration and management including planning, labor and fiscal management, and distribution of earnings; new situations must be looked into and studied and new problems solved so that rural villages will become prosperous with all possible speed.

(1) There is need for further elimination of the influence of leftist ideology and surmounting of subjectivism and a small peasant economy mentality. Large-scale agriculture and large-scale grain concepts must be established that take as their point of departure China's realities and that make fullest use of China's natural resources and labor resources. Making the most of local advantages, active development of diversification, increase in production of commodities, taking full advantage of the potential that surplus rural labor provides, and widening production avenues are strategic measures for making the rural economy boom and is the road that must be taken for rapid increase in commune member distribution levels, going from poor to wealthy. In order to do this, it is necessary to diligently put into effect the spirit of the CCP Central Committee and State Council notices on various problems in development of rural diversification; equitably readjust the pattern of agricultural production; summarize concrete experiences in eradicating poverty and becoming prosperous; actively developing diversification in agriculture, forestry, animal husbandry, sideline occupations, fisheries, and industry; and take the path of comprehensive development of agriculture, industry, and commerce to produce a rapid upswing in the rural economy.

2. Do a good job of fiscal restructuring and conscientiously solve problems of high costs and poor economic benefits.

We must continue implementation of State Council (1980) document No. 269 and diligently spread the experiences of Changping County, Beijing in restructuring fiscal matters. Doing a good job in the restructuring of fiscal matters requires, first of all, a clear-cut guiding mentality. Restructuring of fiscal matters requires both adherence to the mass line and not engaging in boisterous mass campaigns that pit the cadres and the masses against each other. Rather, it should be done through

leadership, organization, and step-by-step stock taking of capital, material, and accounts; further clarification of resources; the formation and perfection of systems geared to existing problems, improvement in management levels; and achieving increases in income and conservation of expenses so that both the collective and commune members may become prosperous as quickly as possible. Stock must be taken of cash, materials, fixed assets, and of credits and liabilities. Current accounts for units and individuals should be checked closely; and monies owed by state enterprises to production teams, in particular, should be diligently recovered. If they cannot be recovered for the time being, interest should be charged for them on the basis of bank interest rates, or banks should be consulted about taking them over. Experience from all over shows that, in order to solve the problem of debts for excess expenditures, first of all it is necessary to solve the problem in cadre understanding, particularly in grass roots cadre understanding, of distribution according to work. It is mistaken to suppose that the more one takes on in the life of a commune member and the less money one needs, the more this shows the superiority of socialism. Second, cadres must take the lead in repaying funds and take the lead in putting into effect fiscal systems. Third is need for reform in the method of distributing material goods. The proportion of distribution of consumption grain according to labor should be expanded in promotion of the method of increased consideration for distributions in accordance with labor. As regards material goods, it is proposed that only quotas be assigned and that, when commune members take goods, they pay cash for them (they may use offsets against remuneration for labor). In short, active efforts must be made to get funds back so that limited capital can be used for the most urgently needed items in production.

The system of fiscal management has to be perfected. In view of the various forms of a system of responsibility, the masses should be aroused to draw up plans management, capital management, cash management, property and material management, grain management, expenditures examination and approval, democratic management, and such effective fiscal management systems, henceforth adhering to these systems in handling their affairs and placing economic responsibility on those who contravene the systems, thereby creating losses and waste.

There has to be active spread of experiences in accounts specialization and the practice of accounting checks of specific echelons, closely combining the fruits of accountants' labors with remuneration. Specialized accounting linked to production should be instituted to set up a fairly stable corps of specialists. This will be helpful in consolidating and improving the professional levels of the financial corps, help reduce the number of people excused from production duties to do this work, lighten the burden on the masses, and promote increased earnings and thrift in expenditures.

There should be general promotion of expense quotas, limits on expenses, and a system of responsibility for financial management with responsibility for completion of financial work. This may be done by going from lower echelons to higher echelons, from single items to multiple items, from agriculture to diversification, applying it to as many items as one can handle, with cash expenditures and consumption of materials all having fixed amounts in which they may be expended or used, no subsidies being provided in the case of overexpenditures, and awards being offered for conservation. When it is truly impossible to practice fixed quotas or responsibility for completion of tasks, limitations on expenses must still be practiced. Communes must

be operated with adherence to thrift and hard work, expenditures for nonproductive items being reduced to the lowest limit, a resolute stop put to the evil practices of indiscriminate consumption, providing compensation willy-nilly, and reckless borrowing, and efforts made to reduce all unreasonable costs.

In putting fiscal management into effect in production teams that have contracted for production or contracted for work with individual households, guidance must be intensified and experiences constantly summarized.

(1) First of all, an inventory of fixed assets and goods in warehouses is necessary. Some practical methods and regulations also must be well worked out as to how to manage use of these things. For example, some places have contracted with commune members the use of plow oxen and small farm machines as a means of protecting the capital investment and maintaining value, or else they have turned them over to users at an appriased price, collecting installment payments for them, the payments becoming accumulations for the production team. All property and materials belonging to production teams must be registered and kept on record and properly looked after.

(2) Debt and credit matters must be handled separately. Debt matters are fairly complex in that some are short-term production loans, while others are loans for the purchase of large and medium size far machines and still others are old debts built up as the result of blind direction. In short, investigation and study are necessary to understand circumstances and handle them properly. It is hoped that each province, municipality, and region will summarize experiences in this regard and pass them along to us for the purpose of exchanging them.

(3) Accountant and accounts problems. Accounting is certainly necessary, and common accounting procedures may be set up. Account books are necessary too. In order to simplify ledgers and in the interest of uniformity, they should be set up according to national unified accounting headings, using as many such headings as are needed and not using any that are not needed. There is no need to start from scratch to make another set of accounting headings. All collectively owned property and goods, debts and credits, all withholdings of goods handed over to higher authority by each household, and all bills receivable must be recorded in the ledgers and routinely publicized to commune members. Accounting records from the past, such as ledgers, statistical tables and reports, and other statistical data, are to be in the safekeeping of production teams.

(3) Continuation of the practice of farm product cost accounting test sites.

In order to do a good job at existing experimental teams, we think it is necessary to continue in the spirit of the Ministry of Agriculture November 1980 notice and not expand them for the time being but, rather, concentrate energies on putting this group of experimental production teams in shape. In places where conditions permit, one or two teams may be added to the existing experimental teams within the sphere of production brigades.

(4) Respect for the self-determination of production teams and resolve to lighten the peasants' burdens. This problem is not very easily solved. Not only are poor teams not able to hold their own, but wealthy teams also may be forced to go under.

1. It is necessary to reiterate that transfer for use or taking away without compensation of a production team's workforces, capital, products, or materials is not permitted.

2. Commune and brigade enterprises and production teams are all agricultural enterprises, which should act in accordance with the principles of voluntary participation and mutual benefit, and exchanges at equal value in their mutual economic transactions, consulting fully together, signing economic contracts, not willfully transferring production team accumulations and workforces or practicing egalitarianism and indiscriminate transfer of resources in a disguised form in the name of "operating enterprises," or "practicing integrated administration."

3. Commune and brigade enterprises that have already transferred the funds, materials, or workforces of production teams will have to make an equitable calculation of their value for use in issuance of investment shares, profits being distributed in accordance with shareholdings. If production teams feel such is not profitable, they have the right to withdraw their workforces and funds.

4. In deciding the area to be planted, farming methods, and application of fertilizer, matters must be handled in accordance with the wishes of the masses, with strict attention being given to economic benefits.

5. In civilian-run education, cooperative medical care, planned births, and operation of other collective welfare undertakings as well as training of militia, highway transportation, and commune-operated enterprises, restructuring and equitable adjustment should be done, how much any given enterprise should run being commensurate with the level of development of the collective economy. There can be no lack of concern for objective conditions, exceeding the capacity of the peasants to carry burdens, or capriciously increasing the peasants' burdens. In cases of various kinds of unfair burdens, investigation and study should be done in accordance with the views of the central leadership comrades and methods for reform should be put forward.

(5) Reform of the system of distribution of earnings.

First, a change in the existing system of deciding the relationship between collective distributions and commune member distributions on the basis of gross income to distributions on the basis of net income. This is because arrangements for the three relationships [state, collective, and individual commune members] that are based on gross income may easily cause three shortcomings: (1) costs of materials already consumed frequently cannot be recovered entirely, capital for the maintenance of simple reproduction cannot be assured, or problems in production costs being disregarded or "exceeding distributions" may crop up; (2) a tendency for collective withholdings to be overly high may easily occur; and (3) the relationship between accumulations and consumption cannot be truly reflected. In order to equitably plan the relationship between accumulations and consumption to achieve increased earnings and conservation of expenses for expanded reproduction, equitable distributions must be made among the state, the collective, and individuals on the basis of distribution of net income, i.e., the net income remaining after deduction of total costs from gross income. Henceforth, as production develops, each jurisdiction must work out a sensible proportional distribution of earnings as different

economic levels dictate, making sure they are neither somewhat high nor somewhat low, to prevent a situation of excess distributions from occurring. A look at the record since 1975 and in recent years shows that a good way is for state revenues and collective withholdings generally not to exceed 20 percent of net income and for commune member distributions not to be lower than 80 percent. How much actual withholdings should be is a matter to be decided by the masses through full discussion taking into account the actual situation obtaining in each jurisdiction.

Second, shortening of the rural capital construction front, first guaranteeing that normal simple reproduction will go on. Statistics from 23 provinces and municipalities show that, in 19 percent of production teams, accumulations exceed expenditures, each production team averaging 3,249 yuan in the red. In national terms, capital for production expenses is seriously insufficient. The range runs from 17.5 percent of production teams having production expense capital amounting to half of production expenses to 17.6 percent of production teams in which production teams with insufficient production cost funds amounted to 36 percent and those with no production cost funds numbered 28.9 percent. Circulating funds were largely lacking, most production teams relying on loans to sustain production. Unless this problem is solved, the situation of reliance on loans for production cannot be changed. Henceforth, production team withholdings must be done realistically, first ensuring funds for further simple production and then making arrangements for funds for expansion of further production. Expenditures for capital construction and for commune welfare must be made with the limits of capabilities. Public accumulation funds and public welfare funds must be first withheld and then used; there can be no "eating now and wondering where the next meal is coming from." Investment in capital construction must be firmly held down, and the red ink that has cropped up in public accumulations must be rapidly wiped out.

On the issue of reports and records on earnings distributions, as various forms of a system or responsibility for production spread, the former set of reports and records are no longer entirely appropriate. I agree with the view of all that two lines should be followed. Furthermore, as household sideline occupations and commune and brigade enterprises develop, the substance of most of the representative surveys of more than 300 production brigades should be removed, and the substance of surveys of household sideline occupations increased. As regards statistics for the three-tier economy, leaders of both the State Agricultural Commission and the Ministry of Agriculture are paying close attention and requiring unification of all three tiers in order to reflect the full picture of the rural economy. How to statisticalize awaits study before decision.

(6) Conscientious building of an administration and management corps to raise cadre management levels.

With the all-around development of agriculture, forestry, animal husbandry, sideline occupations, and fisheries; the gradual strengthening of the three-tier economy; and the integrated development of industry, commerce, agriculture, and industrial sideline occupations, and particularly with the institution of various forms of a system of responsibility, further improvement in both the theoretical and professional level of cadres in management becomes increasingly important. Therefore, attention has to be given to setting up commune administration and management stations; and attention also must be given to cadre training to help resolve real

problems existing in work. (1) Rotational training of cadres must be formulated and upgrading of professional training planned. (2) In all echelons of training, there must be a clear division of labor. The Agricultural Economy Cadre School of the Ministry of Agriculture has to train teachers in agricultural economy for prefectures and counties, and provinces must train assistant agricultural economy teachers and agricultural economy personnel for counties and communes. (3) Training bases have to be established. It is recommended that agricultural economy classes be added to agricultural cadre schools and farm schools and, where conditions permit, agricultural economy schools may be established. (4) As regards the problem of qualified teachers, the Ministry of Agriculture is preparing to run one- and two-semester teacher qualification classes to train qualified teachers for each province. Qualified teachers trained at Shijiazhuang for each province by the Ministry of Agriculture should be used in the most advantageous ways; they should not be dispersed or have their occupations changed.

Intensification of training work is a basic professional project, and existing administrative and management cadres are a precious resource on this front. It is necessary to improve them in a planned way both theoretically and professionally in order to meet the needs of development of the rural economic situation.

The state has already announced criteria for the evaluation of persons in technical positions. It is hoped that each jurisdiction will work with relevant departments to set up experimental units based on persons in these technical positions, gain experiences, and gradually spread them further. Through evaluation of persons in technical positions and further arousal of the initiative of the broad masses of agricultural economy cadres, everyone can be induced to arduous and assiduous study of their profession to raise administration and management work to a new plane.

Finally, Wang Changbo said that CONGSHE CAIWU [Commune Financial Affairs] is a publication especially for administrative and management personnel, which is now published in 300,000 copies each quarter. It is hoped that everyone will pay attention to it and make the most of its role in the exchange of experiences in the financial and accounting profession.

9432
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BOOSTING PRODUCTION OF PROCESSED FOODSTUFFS DISCUSSED

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[Text] Beijing, November 7 (XINHUA)--Workshops under China's food departments produced a total of two million tons of processed foodstuffs in 1980, 60 percent more than in 1979, according to a current national food conference here.

The conference plans to boost the production of such foodstuffs substantially in the coming years to meet the growing demand of the people.

In the past, foodstuffs were mainly processed by light industrial departments. The main work of the Ministry of Food and departments under it is the purchase and supply of unprocessed cereals and oils. In recent years, the food departments have shared part of the business with the commercial departments, thus boosting production of processed and semi-processed food.

Up to now more than 2,300 workshops have been set up by the food departments to produce dried noodles, machine-made noodles and bread. In addition, thousands of small processing workshops are run by grain supply stores. They have not only produced noodles and bread but also spirits, malt, soybean sauce, vinegar, gourmet powder, bean curd, pastries and beer.

The national conference urged the food departments to develop affordable foodstuffs that suit popular tastes, including items of national and local flavor, to cater to the growing demand of the people. At the same time, the industry should develop the production of intermediate and high quality food, children's food as well as nutritious food of good quality, the conference said.

Tens of millions of tons of food grain are supplied annually to cities and towns. Part of this amount can be processed into foodstuffs, the conference said.

The demand for processed wheaten food [as printed] has increased in Hunan, Jiangxi, Guangdong and Fujian provinces and the Guangxi region where rice is now the staple food, the conference reported.

Shanghai, where the food industry is well-developed, plans to build another four flour mills and expand three existing ones to process fine flour for superior quality foodstuffs.

The conference called on food departments to pay attention to supplying the food industry with better steaming, baking, measuring, packing and refrigerating equipment and to sponsor the designing and manufacture of such equipment.

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BRIEFS

COTTON FIRE PREVENTION--Beijing, 24 Oct (XINHUA)--The concerned department under the Ministry of Public Security recently called on units concerned in the various localities to pay attention to fire prevention in the course of cotton procurement. Because of neglect of fire prevention work, a considerable number of fire accidents have occurred in some localities in the course of cotton procurement. Last year more than 1.5 million jin of cotton was burned by fire throughout the country. In the first 8 months of this year alone more than 1 million jin of cotton was burned by fire in China. [Beijing XINHUA Domestic Service in Chinese 0233 GMT 24 Oct 81 OW]

CITRUS OUTPUT--Beijing, 2 Nov (XINHUA)--It is estimated that China's nine major citrus fruits producing areas, including Jiangsu, Zhejiang, Fujian, Jiangxi, Hubei, Hunan, Guangdong, Guangxi and Sichuan, will produce some 15 million dan of oranges and tangerines this year, an increase of 10 percent over the last year. [Beijing XINHUA Domestic Service in Chinese 0014 GMT 2 Nov 81 OW]

TREE PLANTING--Beijing, November 7 (XINHUA)--The Ministry of Forestry has asked that every able-bodied person plant several trees every year and help make the country green, according to Friday's tabloid ECONOMIC INFORMATION. The ministry adopted the measure at the proposal of the central authorities to protect forest resources and prevent the ecological environment from deteriorating. Forestry departments, the ministry said, should develop plans, train personnel in afforestation and prepare saplings. The ministry also decided to reduce annual timber output by anywhere between 4.5 million and 5.5 million cubic meters between 1982 and 1985. Because of domestic timber reduction, the ministry will use more tree residues and increase the import of timber. Reclaiming farmland from forests is prohibited. Those reclaimed steep hill slopes should be reforested in two or three years, the ministry said. [Text] [OW070855 Beijing XINHUA in English 0817 GMT 7 Nov 81]

SCIENTIFIC FARMING PROMOTION--Beijing, 26 Oct (XINHUA)--The Chinese Government with the wholehearted approval of the peasants has taken steps to promote scientific farming. Throughout the country, there are now 24,000 agrotechnique stations, 2,396 seed companies, 562 fertilizer stations and 1,700 agricultural research institutes at the county level. This information was given out at the national conference on agriculture which closed last week in Beijing. In China, a growing number of peasants are interested in scientific farming. The spurt of enthusiasm has been caused in part by the new responsibility system in which the peasants' income depends entirely on the amount of crops reaped. Some 200,000 peasants have already taken agrotechnology courses and more are taking turns to attend. [Beijing XINHUA in English 1236 GMT 26 Oct 81 OW]

CSO: 4020/25

BRIEFS

COUNTY ANIMALS--Suxian County, Anhui, this year has 101,500 head of big domestic animals in stock, 16,500 head more than in last year. [OW091141 Hefei Anhui Provincial Service in Mandarin 1100 GMT 7 Nov 81]

COUNTY CROPS--Shou County, Anhui, reaped all-round bumper harvests this year. Its total output of grain is 1.1 billion jin, oil-bearing crops 44.66 million jin and ginned cotton 9.1 million jin, an increase of 39, 300 and 49.6 percent, respectively, over 1980. The county retained 760 million jin as food grain, or 800 jin per capita, an increase of more than 200 jin over normal years. Per capita net income from various economic undertakings is 201.4 yuan, 71.4 yuan more than last year. [OW040955 Hefei Anhui Provincial Service in Mandarin 1100 GMT 3 Nov 81]

CSO: 4007/74

FRUIT, TEA PRODUCTION REVIVED IN PUTIAN PREFECTURE

Fuzhou FUJIAN RIBAO in Chinese 8 Oct 81 p 2

[Article by Putian Prefecture Communications and Liaison Station: "Putian Prefecture Hastens Expansion of Its Famous Fruits and Teas. Makes Grant for Selling Goods; Builds Bases; Improves Management"]

[Text] Recently the Fujian Provincial Government and Putian administrative offices have made a grant of 1.3 million yuan as a gratis investment for support of this prefecture's commune, brigade, and commune member expansion of production of traditionally famed fruits and teas.

Putian Prefecture has 765,000 mu of mountain and wasteland shore areas suitable for the growing of teas and fruits. As a result of "leftist" harrassment in the past, the total area on which teas and fruits were grown in the prefecture amounted to only 180,000 mu by 1976. Following the Third Plenary Session of the 11th Party Central Committee, all units concerned lent vigorous support to tea and fruit production. The prefecture used more than 1 million yuan annually in subsidied and loans for new plantings of tea and fruits. This, plus the steady implementation of policies on tea and fruit, greatly increased commune member enthusiasm for growing tea and fruits. Throughout the prefecture, 67,000 mu was newly planted to tea, amounting to twice the total expansion for the previous 28 years. More than 80,000 mu were planted to traditional famous fruits such as loquats, longans, lichees, citrus fruits, and plums, a 62 percent expansion over the former acreage. Plans called for an annual expansion of 10,000 mu of tea, and 20,000 mu of fruit beginning next year, so that by 1985 of the tea and fruit growing area of the prefecture will cover 570,000 mu.

In its expansion of tea and fruit production, Putian Prefecture adopted the method of "adaptation of general methods to local situations and necessary centralization," with the building of bases in major places. Now the prefecture has 332 bases for the growing of traditionally famous fruits, and 243 bases for tea growing, as well as 13 nursery bases. The two counties of Putian and Shanyou, have been hailed as "famous the world over the Xinghua longans," and the four communes at Huating, Jiaowei, Shanwei, and Fengting have set up longan bases ranging from 5,000 to 10,000 mu or more for an area totaling 41,000 mu. Of this total, 16,000 mu has been newly planted during the past year or so. These four communes account for more than 60 percent of all longan production in the prefecture. In Yongtai County, famed as the "land of plums" during the time when large numbers of fruit trees were cut down, the county's production of plums plummeted from the former 160,000 dan to 16,000 dan. During the past 2 years, with the implementation of systems of responsibility for plum production, various communes and brigades have newly planted 13,500

mu of plums for a more than 48 percent increase in the original area. Minqing County has set up 38 snow orange [7185 2674] bases along the banks of the Min River where more than 660,000 snow orange and Mandarin orange trees have been planted on more than 10,000 mu. Responding to popular demand for expansion of snow oranges, the county has designated another 910 mu of rice paddies along the banks of the Min River for the planting of more than 59,000 snow orange trees.

While expanding the new tea and fruit growing area, Putian Prefecture has diligently intensified care of old trees, and has set up various forms of a system of responsibilty everywhere with the result that a bumper tea and fruit crop have been harvested this year. Tea output (dry tea) in the prefecture will likely reach 15,000 dan, a 4,000 dan increase over last year, and output of longans has exceeded the all-time high. Lichee output reached 58,470 dan, a 16,900 dan increase in output over the "big year" of 1979. Plum output reached 116,000 dan, which was also a 15 percent increase over last year's bumper crop.

9432
CSO: 4007/63

FENG JIXIN CONDUCTS RURAL INVESTIGATIONS

SK020551 Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 1 Nov 81

[Text] Feng Jixin, acting first secretary of the Gansu Provincial CCP Committee, recently conducted rural investigations in Linxia Hui Autonomous Prefecture. He noted: "Following the enforcement of responsibility systems in rural areas, it is necessary to upgrade the work to apply scientific farming and to develop a diversified economy.

Comrade Feng Jixin held discussions with commune-brigade cadres and commune members of various nationalities in the autonomous prefecture 25-28 October to hear their opinions on the party's rural policy and the leadership over agricultural production. Though the prefecture was plagued with natural disasters this year, rural commune members' morale is stable and their working enthusiasm is high, resulting in careful work in farmland management and new achievements in scientific farming. For instance, the brigade at the foot of (Taizi) Mountain of (Tiazai) commune in Linxia County has doubled its wheat output this year by shifting from spring wheat planting to autumn wheat sowing. (Ziaozuo) commune's (Houduan) brigade has greatly increased its wheat and rape output by breeding fine new strains.

While attaining such production achievements, Comrade Feng Jixin noted: Peasants have discovered the advantages of new seed and new production technology and have a strong desire to apply scientific farming. Most rural areas in the province have an excess labor force. Therefore, efforts should be made to transfer some manpower to do construction work, such as building water conservancy and irrigation projects and leveling land, in line with the actual situation.

During his rural investigation of Linxia Hui Autonomous Prefecture, Comrade Feng Jixin also viewed the bustling rural trade fairs and conversed with industrial and commercial households and to grasp the production of plants and enterprises.

CSO: 4007/75

HIGHER EARLY RICE YIELDS CREDITED TO SYSTEM OF RESPONSIBILITY

Guangzhou NANFANG RIBAO in Chinese 19 Oct 81 p 1

[Article: "New Strides To Make Output Even Higher; Chenghai County Decides on Forms of System of Responsibility for Production In Accordance With Realities; For the First Time Early Rice Crop Yields Throughout the County Break 800 Jin Per Mu; Both Yields Per Unit of Area and Total Output Average Increase Over Same Period Last Year"]

[Excerpts] Chenghai County, famous for its high rice yields, has acted in accordance with realities to promote a system of responsibility for production in which the major forms are contracting for small segments of work, and calculation of remuneration on the basis of fixed quotas, making new strides with this year's early crop. Paddy rice yields throughout the county averaged 805 jin per mu, a 49 jin increase over the same period last year, and breaking the 800 jin mark for the first time. Despite a more than 32,000 mu reduction in the area planted, total paddy rice output still appproached the all time high level of 1978. Increased output of economic crops such as peanuts were also harvested everywhere.

Chenghai County as a total of 199 production brigades of which 108 production brigades are basic accounting units. In an overwhelming majority of these brigades, the foundation of the collective economy is quite good, and a rather large number of industrial sideline occupations are operated. The production brigades have universally instituted a system of responsibility of "several fixed and a single reward" for their production teams and industrial sideline occupations. Generally speaking the management level of cadres in these units is fairly high, and the level of peasant production techniques is also fairly high. In addition, this is a plain area where people live closely together, where the fields are continuous tracts, and where water conservancy and irrigation, as well as use of farm machinery are fairly good. Institution of unified administration here helps scientific farming. Additionally, these production brigades reap increased yields from crop after crop year after year, and are substantially able to fulfill rather well the various requisition procurement quotas for agricultural byproducts that the state hands down, are able gradually to increase collective accumulations, operate collective welfare endeavors, and are able, as well, to make good on cash surpluses for work done by commune members in a demonstration of the superiority of the collective economy. As a result, most of the cadres and masses want to keep this system of responsibility of contracting small segments of work and fixed quota management in production teams under the accounting of production brigades. Last year when Central Committee instructions on the perfection and enhancement of systems of

responsibility for agricultural production were put into effect, the County CCP Committee believed that promotion of a system of responsibility for production had to be done with realities in mind, that there could be no drifting along with the current or practice of "arbitrary uniformity;" numerous forms had to be permitted to co-exist. Given Changhai County's realities, further practice of contracting for production or contracting for work with individual households in rice production was not practical. Instead, it was practical to consolidate the existing system of responsibility, suitably readjusting it and gradually perfecting it. The views of the County CCP Committee gained the support of the broad masses of cadres and people. Thus, most communes and brigades in the county continued to implement a system of responsibility for rice production of contracting small amounts of work and fixed quota management.

This year's experiences have shown that when they are in accordance with local realities and the will of the masses, institution of various forms of a system of responsibility for production can produce fine results. Lianshang Commune instituted a system of contracting small segments of work and fixed quota management for rice production throughout the commune. Each production team did a good job of scientific farming for yields from the early rice crop averaging 911 jin per mu, setting an all-time high for communes throughout the county in per mu yields. Seven production brigades in the county had early rice yields averaging more than 1,000 jin per mu, six of them being brigades that had instituted a fixed quota management system of responsibility. At the Shengzhou Production Brigade in Lianshang Commune, where a fixed quota management system of responsibility had been instituted, yields from the early rice crop were 1,091 jin per mu, a 114 jin per mu increase over the same period last year.

9432
CSO: 4007/63

BRIEFS

GUANGDONG PREFECTURE FLOOD DISASTER--From 28 September to 8 October, Luoding, Yunan, Xinxing, Yunfu and Gaoyao counties in Zhaoqing Prefecture had continuous torrential rain and extraordinarily big torrential rain. The rainfall reached 400 to 500 mm. The daily rainfall in some places was some 300 mm. Apart from floods, they suffered strong cold dew wind. The average temperature was only 15 to 16 degrees. The lowest temperature in some mountainous areas was below 9 degrees. These temperatures adversely affected the growth of paddy rice. Approximately 300,000 mu of paddy rice was flooded. It was estimated that production on 100,000 mu of farmland would seriously drop. Some 8,000 houses collapsed and 14 people were killed. Some water conservancy projects and communications facilities were damaged by the flood. Eight districts and townships were inundated. After the disaster occurred, all county CCP committees and county governments in the prefecture immediately arranged and organized antidisaster and relief work. Leaders at all levels concentrated forces on crash-rescuing several thousand people who were trapped by the flood and evacuated them to safe places. On 10 October, the prefecture appropriated 100,000 yuan to the flood-stricken areas to make arrangements for people's livelihood. The prefecture also mobilized all departments to give the flood-stricken areas a large number of chemical fertilizers, timber, cement, gas and diesel oil to help them restore production. [HK260749 Guangzhou Guangdong Provincial Service in Mandarin 2330 GMT 16 Oct 81 HK]

SUMMER PROCUREMENT--This year Guangdong Province's rural villages adapted general methods to local situations to readjust the agricultural production pattern. It also put into practice various forms of a system of responsibility, and planted more peanuts, tending them carefully, for a great increase in the peanut crop planted in the spring. In the wake of the bumper peanut harvest, grain departments in all jurisdictions used every manner of means to set up network of procurement sites to help the masses sell their edible oil to the state. As of 30 September, more than 93 million jin of edible oil from the province's summer crop had been put into storage, more than 5.7 million jin more than for the same period last year, overfulfilling by 14 percent the annual edible oil procurement quota. Shantou, Zhanjiang, and Meixian Prefectures, as well as the Hainan Li and Miao Nationality Autonomous Zhou have overfulfilled the year's edible oil procurement quotas, the quantity purchased by the state amounting to 80 percent of the amount placed in storage throughout the province. [Text] [Guangzhou NANFANG RIBAO in Chinese 15 Oct 81 p 1] 9432

CSO: 4007/63

BRIEFS

SUMMER GRAIN PROCUREMENT--Guangxi has overfulfilled this year's summer grain procurement task and delivered more than 2.037 billion jin of grain to the state granaries. This was possible because the institution of various production responsibility systems in the country has greatly aroused the enthusiasm of the commune members. They energetically sold grain to the state after defeating the natural disasters and winning a bumper harvest. Some households sold more than 10,000 jin of grain to the state. [HK160859 Nanning Guangxi Regional Service in Mandarin 1100 GMT 7 Oct 81 HK]

CSO: 4007/75

CONSERVATION OF WATER RESOURCES URGED

Major Users Initiative

Beijing BEIJING RIBAO in Chinese 22 Sep 81 p 1

[Article: "Major Water Users Should Hurry Up and Act"]

[Text] Water conservation by major users is a major concern that affects the whole situation. According to statistics, the annual consumption of water by the First Thermal, the Second Thermal and the Gaojing Power Plants constitutes over one-half of the total annual amount of water used by the whole city. If these three power plants all implement recycling of water, the amount of water consumed will be reduced by nearly a half. The city also has over 200 plants that use over 10,000 tons of water a day. If they also sufficiently implement the measures to utilize recycled water, each year they can conserve at least 50 million tons of water, constituting 5 percent of the total amount of water used by the whole city. As can be seen, accomplishing water conservation work by major users is the key to easing the water shortage in the capitol and to overcoming the difficulty of this shortage.

Strengthening water use management and stopping running, surging, dripping and leaking water are important measures in water conservation. But, for industrial and mining enterprises, especially major water users, quickly realizing the recycling of water is the fundamental solution. Take the Second Thermal Power Plant as an example, in the past, cooling water flowed through only once, and each year, over 300 million tons of water was allowed to flow away, causing a great waste of water resources and energy. Also, because of insufficient water supply, the plant was forced to shut down one to two generators this year; each month, it has generated 30 to 50 million kilowatt-hours of electricity less. If recycling of water is completely realized, water resources and energy can be massively conserved and normal generation of electricity can be assured. Exactly because of this, the concerned departments and units are determined to face the difficulties and to come up with many ways to carry out engineering projects to recycle water.

It is hoped that other major water users will also clearly recognize this situation, measure the benefits and shortcomings, and act quickly. Although there are many difficulties in the installation of water recycling equipment without doing so, the situation will be more and more difficult. Instead of waiting until one is forced to the point of doing something, it would be better to take the initiative now.

Plant's Conservation Efforts

Beijing BEIJING RIBAO in Chinese 30 Aug 81 p 1

[Article by Fan Sancheng [5400 0005 2052]: "Conserving the Use of Water Is Glorious, Wasting the Use of Water Is Shameful, Powdered Milk Plant Retrieves and Utilizes 185 Tons of Underground Water Each Hour"]

[Text] The powdered milk plant of the city's milk company has developed a spirit of concern about the whole situation and self consciously conserved the utilization of underground water. Each hour, it retrieves and utilizes 185 tons of underground water. The retrieval rate constitutes 68.5 percent of the total amount of water used.

The powdered milk plant is a unit that uses a lot of water in production. Since 1958 when the plant was built, this plant has used the underground water of the two deepwater wells in the plant for all the water used in production. Because the use of water was not limited, ordinary consumption of water was large, and the wasting of water was very serious. During the recent 2 years of persistent drought, ground surface water has decreased, the underground water level has dropped, and the state has emphasized conserving the use of water. The cadres and workers of the powdered milk plant saw this situation. They strictly executed the state's regulations concerning the use of underground water, and they established and implemented measures to conserve water. First, the plant's leading department assigned the group in charge of increasing production and conservation the responsibility for conserving water and carried out periodic inspection of the use of water by each shop and shift. When wastefulness was discovered, the units were warned once, when wastefulness was discovered a second time, the units were severely warned, after the third warning, points for conservation were deducted from the 100 points of rewards. Second, tap water pipes were inspected and repaired in time, and if leaking water pipes and valves were found, they were changed immediately. Third, the nearby agencies, streets, communes and brigades that used the underground water together with the plant joined in a rational control and water-meters were intalled and fees were collected according to regulations. Fourth, return water pipes were installed, water cooling towers and water ponds were built and water used by freezers and hydraulic sprayers was retrieved. In the past, the water flowing out of the freezers and water sprayed from the hydraulic sprayer used for processing extracts of malt and milk were wasted. Now, because of measures of retrieval and utilization, of the 70 tons of water used per hour by the freezer, 25 tons can be retrieved and utilized. Of the 180 tons of water used per hour by the hydraulic sprayer, 150 tons can be retrieved and utilized. The boiler room's return water pipes can retrieve 10 tons of water per hour, totaling 185 tons; this is retrieved and utilized. At present, the measures of retrieval and utilization of water at this plant have not been completely utilized. If they are all used, the plant can basically retrieve and utilize all of the 270 tons of water used per hour in production.

Scientific Water Use

Shijiazhuang HEBEI RIBAO in Chinese 29 Aug 81 p 2

[Article by Water Conservation Office of Shijiazhuang City: "Use Water Scientifically, Protect Water Resources"]

[Text] Now, the city has a sericus shortage of water. At some places, water has to be rationed to maintain production and the people's livelihood. As the building of the four modernizations develops, as the standard of living of the people improves, scientific use of water and protecting water resources have already become a problem that needs urgently to be solved.

Generally, cities are characterized by a concentration of population and developed industry. This creates a definite difficulty in the use of water. Take Shijiazhuang City as an example, industrial enterprises are mostly concentrated within the 55 square kilometers of the city limits. The exploitation of water is concentrated and drainage is also concentrated. The average annual rainfall in the city is only over 500 millimeters, the major source of water is the hidden flow of underground water of the Hutuo River. According to surveys by the geological and hydrological departments, the daily amount of water drawn by Shijiazhuang City has approached its limit. The underground water level is dropping year after year, many water wells have reduced their yield, have produced sand and have been abandoned. With the pollution of water sources, they have posed a definite threat to urban construction and the people's lives. If effective measures are not taken, if attention is not paid to rational use of water, if water sources are not protected, a water crisis may develop.

In the question of water conservation, some people believe facilities must be added, investment must be increased, and in this way, the cost will be increased, affecting profits. In actuality, this is not so, the First Cotton Textile Plant of Shijiazhuang invested only 20,000 yuan and conserved 2.25 million tons of water, 250,000 kilowatt-hours of electricity, 180,000 yuan in capital a year. In 1 year, it retrieved nine times the investment in return. Conserving water requires some investment, but viewing the problem from the developmental and the dialectic viewpoint, if we do not pay attention to conserving water, and if a water shortage occurs, the problem will not simply be a matter of a few dollars, but the whole sector of production could not be carried on, the people's livelihood could not be assured, and the loss would be immeasurable. Therefore, scientific use of water and protecting water resources are needs of the people's livelihood, are needs of urban construction, and they should attract the attention of the leadership at each level actually to take forceful measures to grasp this work tightly and well and to produce results.

9296
CSO: 4007/39

OIL BEARING CROPS EXPANSION REPORTED

Shijiazhuang HEBEI RIBAO in Chinese 27 Aug 81 p 1

[Article provided by the Food Grains and Oil Department of the Provincial Agricultural Bureau: "The Area of Oil Bearing Crops of Our Province Is Large, the Growth Is Good"]

[Text] This year, the area of oil bearing crops in our province expanded further based on last year's highest level in history. According to preliminary statistics, the whole province sowed a total of 7.31 million mu of oil bearing crops, 390,000 mu more than last year. The area of peanuts, which increased more, totaled 4.1 million mu, an increase of 580,000 mu over last year. The area of sunflower increased 630,000 mu, an increase of nearly 150,000 mu over last year. Because management has been strengthened, the growth trend of the various oil bearing crops is good.

This year, during the sowing season of oil bearing crops, even though there was serious drought, the broad numbers of contract families and contractors implemented various drought resistant measures artificially creating moisture, mixing water with manure, gathered water for dibbling. They repeatedly supplemented and turned over the soil with missing seedlings and broken ridges, many ways were used to preserve the seeds sown and the full seedlings, and most fields realized full and strong seedlings. Some areas of concentrated peanut production grasped the implementation of the two key technical measures that produced the most visible results of increased production. One was the popularization of increasing the holes and reducing the seeds and rational dense planting so that the density of peanuts visibly increased. The second was the popularization of clearing the plants and reducing irrigation of seedlings for a limited period to encourage healthy growth.

9296
CSO: 4007/39

BRIEFS

SUNFLOWER HARVEST--Heilongjiang Province reaps bumper harvest of sunflower this year. It is estimated that the average per mu yield of sunflower will increase 10 percent over 1980 and total output will reach 6 million dan, an increase of 15 to 20 percent over 1980. This year the areas sown to sunflower totals 4.04 million mu, a 10.3 percent increase over 1980. In addition, Baiquan County is expected to market 100 million jin of sunflower seeds to the state. [SK250226 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 19 Oct 81 SK]

CSO: 4007/75

BRIEFS

WHEAT CULTIVATION CIRCULAR--According to a HENAN RIBAO report, [name indistinct] Provincial People's Government issued a circular on 1 October on doing a good job in wheat cultivation. The circular said: Cold winds are prevailing at the moment. In order to fulfill wheat cultivation quotas and reap a bumper harvest next year, we must: 1) fully understand the significance of doing well in wheat cultivation. The provincial CCP committee has demanded that the total wheat production reach 22 billion jin next summer. Therefore, we must strive to increase the per unit area yield and the gross output as well; 2) promote field tending and capital construction in wheat fields and manage well water conservancy projects and water consumption; 3) organize application of agricultural science and technology and improve the level of wheat cultivation. It is necessary to popularize sowing of fine strains of seeds in the production teams and brigades. The province plans to grow 5 million mu of rape and expects a total rape production of 400 million jin next year; 4) do a good job of the autumn harvest and procurement of crops harvested in autumn; 5) strengthen leadership in wheat cultivation and push toward responsibility systems. All departments must ensure supplies of materials to assist wheat cultivation and lay a good foundation for a bumper wheat harvest next year. [HK160859 Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 3 Oct 81 HK]

CSO: 4007/75

RURAL INCOME FROM SIDE-LINE PRODUCTION REPORTEDLY INCREASES

Wuhun HUBEI RIBAO in Chinese 29 Sep 81 p 1

[Article: "Hubei Province's Rural Commune Member Household Sideline Occupation Earning Increase Year by Year. Collective and Individual Initiative Used to Advantage"]

[Text] Ever since the Third Plenary Session of the 11th Party Central Committee, rural commune member household sideline occupations in Hubei Province have rapidly revived and expanded in a heartening situation. The peasant masses give praise saying: "The party's policies are good; the household economy is alive; commune members have money to spend; and males, females, the old, and the young are happy."

Statistics show a year by year increase in earnings from rural commune member household sideline occupations throughout the province. In 1979, earnings averaged about 30 yuan per capita. This climbed to somewhat more than 40 yuan in 1980 for a 36 percent increase. A representative survey shows that this year's earnings from commune member household sideline occupations will increase by about 40 percent over last year.

Policies encouraging commune members to develop household sideline occupations and get rid of the shackles of leftist ideology have brought into play the socialist initiative of the masses of commune members resulting in fullest use of people's talents, fullest use of materials, and fullest benefit from land. Commune members in the Nanhe Production Brigade in Laoguan Commune in Jiayu County along the banks of the Jinshui River raise alot of fish, grow lotus, raise ducks, breed mink, make straw bags, keep bees, and propagate freshwater pearl clams as sideline occupations. During the first half of this year, their earnings amounted to more than 15,000 yuan, for an average 90 yuan per capita and a 33 percent over the same period last year. Jiepai Commune in Honghu County made the most of its advantage of a large workforce. Twenty percent of this commune's able bodied males engaged in industrial sideline production earning an average of somewhat more than 580 yuan per capita in half a year. Commune member Luo Shimei [5012 2514 5019] of the Dongtang Second Brigade of Huangsha Commune in the mountains of Puqi County extensively planted economic woods in front of and behind his house, and raised more than 10 hives of bees earning 2,000 yuan this year. Zhao Chengwu [6392 2052 2976], commune member in the Jianfeng Production Brigade of Nanhai Commune in Songzi County used his spare time to catch, hatch the eggs of and raise long-noded pit vipers [Agkistrodon acutus] for earnings last year amounting to more than 1,600 yuan. This year he has caught 30 of these snakes and more than 80 green snakes [7239 5748], and his earnings have broken the 5,000 yuan mark.

All jurisdictions have considered commune member household sideline occupations as major supplements to the collective economy, have strengthened leadership, and have given technical guidance and economic support to them. The CCP Committee of Haodian Commune in Yingshan County organized units directly subordinate to the commune to help commune members with funds and technology to develop household sideline occupations. The supply and marketing cooperative of the commune invited 15 technicians to go around to teach commune members about improving varieties, animal and plant protection, and processing and storage of agricultural products. Since last year, the commune's bank business office has issued loans totaling more than 77,000 yuan to more than 1,900 commune members, and commune member household sideline occupations throughout the commune have developed fairly rapidly and fairly well.

Now the mass of commune members are striving to do a good job of collective production, while at the same time actively amassing funds to purchase the means of production to increase household sideline occupations items, expand the scope of production and advance along the road of making labor prosperous.

9432
CSO: 4007/63

BRIEFS

COUNTY PROCUREMENT--Wuhan, 9 Nov (XINHUA)--As of the end of October, Jingmen County, Hubei, had purchased 228 million jin of grain, an increase of 15 percent over the same period last year; 55,000 dan of cotton, an increase of 54.5 percent over the same period last year; and 9,880 dan of oil and fat, an increase of 640 percent over the same period last year. [Beijing XINHUA Domestic Service in Chinese 0026 GMT 9 Nov 81]

CSO: 4007/74

BRIEFS

PRODUCT PROCUREMENT--The Liaoning provincial farm and sideline product procurement this year is better and proceeding more quickly than in previous years. According to statistics compiled by the department concerned, by 20 September the province had purchased over 192,300 dans of flue-cured tobacco, a 47.8 percent increase over the figure set by the procurement plan and a 5.7 percent increase over the corresponding 1980 period. It purchased over 29,500 dans of cotton, a 27 percent increase over the corresponding 1980 period; over 9,100 dans of hemp, a 0.8 percent increase over the corresponding 1980 period; and over 36,000 tons of apples, an 81 percent increase over the corresponding 1980 period. [SK011310 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 1 Oct 81 SK]

TOBACCO PROCUREMENT--As of 25 September, Liaoning Province had procured nearly 23 million jin of new tobacco leaves, an increase of 2 million jin over the corresponding 1980 period. Over half of the tobacco leaves are of high or middle-class quality. [Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 3 Oct 81 SK]

TUSSAH COCOONS OUTPUT--Despite natural disasters, Liaoning Province is expected to produce 800,000 dan of tussah cocoons in 1981, second to the good harvest in 1980 and an increase of 1.64 times over the output in 1976. [SK062156 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 5 Oct 81 SK]

HAICHENG COUNTY GRAIN--Haicheng County in Liaoning Province reaped bumper harvests of grain, oil-bearing seeds and cash crops. Its grain output will be a 32-year record. By 24 October, the county had sold to the state 72.75 million jin of grain. The quality of grain sold to the state was better than in previous years. [SK290804 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 27 Oct 81 SK]

CSO: 4007/75

BRIEFS

ANIMAL HUSBANDRY--Xining, 22 Oct (XINHUA)--This year the total number of livestock in the six autonomous prefectures of Qinghai Province has increased by 3 million head, or 154,700 head more than the increase registered last year. [OW261217 Beijing XINHUA Domestic Service in Chinese 0017 GMT 22 Oct 81]

CSO: 4007/75

EFFORTS TO COMBAT DROUGHT, SOW WHEAT REPORTED

Yantai, Weifang Prefectures

Jinan DAZHONG RIBAO in Chinese 27 Sep 81 p 1

[Article by Luo Shouliang [5012 1108 5328], Liu Hongyi [0491 7703 0308], and Han Chunpu [7281 2504 0944]

[Text] Faced with serious drought, the broad masses of cadre and people of Yantai Prefecture have rallied their spirit and overcome difficulties in an effort to plant a sufficient amount of wheat well on an area of 6.6 million mu. As of 23 September, 1.1 million mu had been sown throughout the prefecture.

This year's drought in Yantai Prefecture has been characterized by especially long duration and a large affected area. As of mid-September, average rainfall in the prefecture was only 370 millimeters, less by more than 250 millimeters than in the same period in ordinary years. Between mid-August and the present, only 22 milimeters of rain has fallen. Water conservancy facilities of various kinds throughout the prefecture contain only 300 million cubic meters of water, 700 million cubic meters less than for the same period in ordinary years. Underground water has everywhere dropped by 3 to 4 meters as compared with the same period in ordinary years, and in seriously affected places it has fallen as much as 9 meters. The affected area amount to somewhat more than 9.5 million mu. In view of this situation, the Prefecture CCP Committee convened a telephone conference on 9 September, and each county and municipality convened meetings of commune secretaries and directors of management committees to rally every level, to vigorously propagandize the favorable conditions and the important significance of triumph over the drought, to educate the broad masses of cadres and people to overcome their fear of difficulty and their mentality of reliance on heaven to send rain, and to strengthen their resolve to do a good job of fall planting. At the present time, a workforce of 350,000 throughout the prefecture has been devoted to combating the drought and creating moisture. They have used every available means to uncover water resources, to enhance capabilities to conserve soil moisture, harvesting, digging for water, and rush planting all at the same time. Xixia County has taken full advantage of its numerous streams, gullies, and low-lying land, as well as its abudnant underground water, to organize more then 30,000 people for all out construction of small water conservancy facilities. They have begun work on more than 580 different water conservancy projects of various kinds, and have already completed 70 percent of the total number of projects. Once they have all been completed, irrigation on more than 30,000 mu of land can be expanded and improved.

In their combat against drought and rush planting, all levels of leadership cadres have gone down into the front lines of production and have strengthened leadership for arduous struggle along with the masses. Already 13,000 cadres from the prefecture, country, and commune levels have gone down to the grassroots. Quite a few units have also set up responsibility zones. In Penglai County, the County CCP Committee, the Standing Committee of the Representative Assembly as well as government leading cadres have put into effect contracting for a tract by an in-place contingent. Twenty-nine leadership cadres from departments, committees, offices, and bureaus have put into effect in-place contingent contracting for bumper output locales, and more than 200 cadres in county government organizations instituted in-place contingent contracting at village level. In this tract, locale, and village work, everything from harvesting to replanting was contracted and subject to requirements, inspections reponsibility clarification, and uniform procedures for examination prior to acceptance, which quickened the pace of autumn planting.

In order to make certain of the progress and quality of fall planting, most units conscientiously improved contracting methods, as well, revised fixed quotas for farm work, and further implemented and perfected various forms of a system of responsibility, thereby arousing the initiative of both the collective and individuals. Taking action on problems that existed in the early phase of its system of responsibility for wheat production, Zhaoyuan County changed uniform contracting for grain crops to individual contracting for wheat, changed contracting from early in the year to contracting just before fall planting, and changed the inequitable fixed output quotas, as well as proportional rewards and penalities. In addition, just before fall planting, it again put into effect wheat contract agreements, and a system of responsibility for workforce organization and field management to arouse the initiative of production brigades, production teams, contract work teams and commune members.

In Weifang Prefecture [also known as Changwei Prefecture] all echelons of the CCP Committee and government have aroused the masses to vigorous action in activities to combat drought in an effort to plant the wheat on time.

All year long the drought situation in Weifang Prefecture has continued to deepen, and since July, in particular, the amount of rainfall throughout the prefecture has been extremely scant. Numerous reservoirs are unable to release water; some streams have dried up; and half of the pump wells and open wells are without water. Faced with severe drought, prefecture, county, and commune leaders on all levels are confident and unafraid, leading the masses to combat the drought to assure fall planting. They have adopted three measures. One is early removal of the stubble of the previous crop, early cultivation of the land, and early leveling of the soil in a seizure of the initiative. Second is tailored guidance. Plans call for the planting of 7.5 million mu of wheat throughout the prefecture. For the 2 million mu on which water conditions are fairly good, removal of the stubble of the previous crop and turning over of the soil was done promptly, and a sufficient amount of wheat was planted well on time, with efforts made to plant a little more than usual. For the 2 million mu that still has some water, every available means was used to tap underground water for use, and rush to provide moisture to the soil in order to sow seeds and assure fulfillment of plan. For the 3.5 million mu where water resources are greatly lacking, water was hauled from afar for the planting of seedling beds, which will await later transplanting in an effort

to assure next summer's consumption grain. Third is in places where the production base is fairly poor, a small number of units who face great difficulties in wheat planting have resorted to division of fields for production of consumption grain. These fields are plowed by the collective, and the collective provides water for them, but individual households water and care for them. Following the harvest, except for a small quantity to be turned over to the production team, the remainder will become consumption grain for commune members. At the present time combat against drought and fall planting activities are underway everywhere.

Qingdao Municipality

Jinan DAZHONG RIBAO in Chinese 30 Sep 81 p 1

[Article by Cui Sulan [1508 4790 5695]]

[Text] In Qingdao municipality, CCP committees and government at all levels have further strengthened leadership and aroused the masses to triumph over serious drought and vow to do a good job of wheat planting. As of 27 September, 450,000 mu of wheat, or 22.5 percent of wheat planting plans, had been planted throughout the urban area.

Qingdao Prefecture has experienced a drought this year such as is rarely seen. Between January and September, rainfall in the city was only 240 millimeters, one-third the usual amount of rainfall for the year. Yields from fall crops have declined and the metropolitan water supply is in dire straits. Fulfillment of wheat planting quotas is more arduous than ever. In order to get on with combat against drought and fall planting, the Municipal CCP Committee and the municipal government have transferred cadres to communes and brigades to put into effect systems of responsibility for the promotion of combat against drought and fall planting. Experience has shown that when a good job is done in implementing systems of responsibility for production, the pace of combat against drought and fall planting are quickened, and quality is high. Numerous units have put into effect unified administration of systems of responsibility linking output to the workforce. Some units have adopted the method of large scale assignment of responsibilities under an uniform administration. Still other units have adopted a method applied to consumption grain fields. All have been very effective. Yingzi Production Brigade in Chengxi Commune, Rujiao County had planned to plant 1,300 mu of wheat, but because of the drought and lack of water supplies, some cadres lost confidence in completion of fall planting plans. Subsequently they put into effect the method of contracting for work to complete large tasks in their entirety with everything being uniformly administered. The masses reacted positively, dug wells, and looked for water, and combat against drought and planting of wheat rapidly got underway. The production brigade has already planted 600 mu of wheat, and they are determined to overfulfill planting plans. In units where the drought is especially severe and fall planting extremely difficult, they have put into effect a consumption grainfield system to arouse the initiative of the masses to combat drought and plant wheat.

Faced with serious drought, the broad masses of cadres and people in Qingdao Prefecture have used every manner of means to tap water resources to create conditions for combat against drought and fall planting. They have taken to digging wells, sinking wells in river courses, and sinking pipe into wells in efforts to expand water resources. Qiaoxi Production Brigade in Lancun Commune, Jimo County planned to plant 1,200 mu of wheat, but for lack of water in the early stage, it was able to plant only 6 to 7 mu each day. Later on, as a result of the arousal of the masses who tapped water resources, within the space of several days, 260 small wells were dug, and the pace of sowing rapidly mounted to 30 or 40 mu per day. Some units located far from water sources have used motor vehicles, tractors, wheelbarrows, and bicycles to haul water, or they have aroused the masses to carry water on shoulder poles to provide the moisture to the soil necessary for planting seeds, in an effort to make mu planted count.

In order to hasten the pace of fall planting, Qingdao municipality has folowed the principle of adapting general methods to local situations, and has put into effect tailored guidance. For the 400,000 to 500,000 mu of wheat fields in the municipality having fairly good water sources, they have required application of sufficient base fertilizer, and good planting of sufficient seeds to provide a bases for high yeilds. For about 1 million mu where water souces are poor and planting is difficult, they have required carrying of water into the fields to provide soil moisture, and planting on large ridges in an effort to plant on time. For the 500,000 to 600,000 mu of wheatfields where sources of water are sorely lacking and farming particularly difficult, they have required careful attention to leveling of the fields, application of fertilizer, and all preparations for planting, so that should rain suddenly fall, rush planting can be done at once. Should "hoar frost descend" [around 23 October] with no rain having fallen, a shift can be made to "preserving the land" to assure a larger summer grain harvest next year.

9432
CSO: 4007/46

SOME SOLUTIONS TO WHEAT RUST PROBLEMS SUGGESTED

Jinan DAZHONG RIBAO in Chinese 30 Sep 81 p 2

[Article by Wang Zhengping [3769 2973 1627]: "Pay Attention to Breeding of New Rust-Resistant Wheat Varieties"]

[Text] Wheat rust fungi are a major parasite damaging to wheat. Once wheat rust occurs in wheat, the drop in yields is very great. Right now the method for prevention and control is largely selection for use of rust-resistant wheat varieties.

Wheat rust fungi, however, are strongly variable and are readily able to generate new physiological microspecies whose external appearance is the same, but which have varying capabilities to invade different wheat species, thereby causing a loss in wheat resistance capabilities of formerly wheat-resistant varieties. During the early 1960's, Shandong Province widely planted Bima No 1, but because of the occurrence of wheat stripe rust physiological microspecie Tiaozhong No 1, it lost its ability to withstand rust, and twice strip rust disease became very prevalent causing the loss of more than 250 million jin of wheat. In the early 1970's, following the rapid promotion throughout Shandong Province of high yeild varieties, Youbao, 2411, and Beijing No 8, because of the occurrence of Tiaozhong No 17 physiological microspecie, stripe rust disease again became very prevalent causing the loss of about 700 million jin of wheat. Consequently, in the prevention and control of wheat rust, it is necessary to pay close attention to changes and spread of physiological microspecies of wheat rust so as to make timely selection for use of different rust-resistant superior varieties to work out a sensible overall distribution of varieties.

Research done by relevant units shows that currently new physiological microspecies of wheat rust, Tiaozhong Nos 23, 24 and 25 are spreading in China. Their incidence in Shandong Province is about 68.4 percent, and they have become the major physiological microspecie of stripe rust of wheat in the province. In the realm of wheat leaf rust fungi, in recent years Shandong Type A and Yehzhong No 3 have spread to become the major physiological microspecies in Shandong Province. This means that the types and forms of wheat rust fungi physiological microspecies in Shandong Province are presently quite different from what they had been in the early 1970's, and that they are in process of impairing the rust resistance capacities of some wheat varieties. In the case of Taishan No 1, for example, because of its resistance to Tiaozhong No 17 physiological microspecie in the early 1970's, only a light infection of leaf rust occurred. This plus its strong adaptability, and its

good overall qualities made it rapidly replace rust-susceptible varieties Youbao and 2411 to become the predominant variety in Shandong Province. In recent years, however, it has become susceptible to physiological microspecies Tiaozhong Nos 23, 24 and 25 (the first two physiological microspecies playing a strong pathogenic role), and it has become highly susceptible to Shandong A Type leaf rust fungi, and moderately susceptible to Yezhong Nos 1, 2 and 3. During the past 2 years, even though Shandong Province has been virtually free of wheat stripe rust because of spring droughts, in the coastal areas of Laoshan, Wendeng, and Jiaonan, it has been possible to find quite a few centers of outbreak of Taishan No 1 in wheat-fields, and in some cases the condition has been fairly serious. In addition, though Taishan Nos 4 and 5, Changle No 5, Fengchan No 3, Baiquan No 41, and Jinan No 10 retain a certain resistance to Tiaozhong No 17 physiological microspecies, they are susceptible to infection by the aforementioned major physiological micro-species.

Looked at in terms of rust-resistance and agronomy, Shandong's presently fairly good wheat varieties are: Gao 8, Jinan No 13, Yannong No 15, and Jining No 13. They show definite resistance to all physiological microspecies of leaf rust fungi, and though some have become infected, the extent of infection is light. They exhibit immunity to, or only slight infection by, Tiaozhong Nos 23 and 24 physio-logical microspecies, and are not resistant only to Tiaozhong No 25 physiological microspecie. Inasmuch as numerous varieties have lost their resistance to wheat rust, the increased planting in disease areas of those varieties that are strongly disease resistant is the practical thing to do. Furthermore, among the group of new varieties (or strains) of wheat that have recently been bred in various units, there are numerous ones that are immune or highly resistant to the major and secondary physiological microspecies of stripe rust. They are either immune or resistant to Shandong A Type and Yehzhong No 2 leaf rust fungi, and are moderately or slightly resistant to Yehzhong Nos 1 and 3. Comparison test or regional appraisals of these varieties should be undertaken at once, selecting those for further propagation and promotion whose agronomy properties are fairly good so as to gradually replace current disease susceptible varieties.

9432
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HEBEI SENDS COTTON STUDY GROUP TO SHANDONG

HK031450 Shijiazhuang Hebei Provincial Service in Mandarin 0400 GMT 24 Oct 81

[Summary] Headed by Vice Provincial Governor Wang Kedong, a Hebei study group visited Shandong from 4 to 11 October to learn from their advanced experience in cotton production.

Last year, Shandong's total cotton output was over 10 million dan. In Liaocheng and Dezhou prefectures, formerly backward in production, total cotton output reached 3.3 and 2.01 million dan respectively, per mu yield was over 100 jin, and per capita income increased from 40 yuan or so in 1978 to 100 yuan. In Linqing County, 410,000 mu of cotton were planted last year and the total output was over 500,000 dan. Thus, the per mu yield was about 125 jin, and based on the rural population, each person turned 10[illegible] jin of commercial cotton over to the state. In Pingyuan County, 244,000 mu [illegible]f cotton were planted and the total output was 258,000 dan, which was an increase of 380 percent over 1978; per my yield reached 106 jin and was an increase of 270 percent over 1978; the per capita income increased by 130 percent over 1978 and reached 110.90 yuan.

Shandong's main experiences are: 1. Leading cadres have taken the matter seriously. In Shandong, certain leading cadres are appointed to take charge of the cotton production. It has been made clear that in cotton production areas, the main task is to promote cotton production, and failure to do so is regarded as the most serious dereliction of duty by leading cadres in these areas. 2. Arrangements for production have been adjusted to suit the promotion of cotton production. In these areas, a policy has been adopted which stresses giving first place to cotton production, and the purchase of grain by the state has been reduced. 3. A series of policies have been implemented. These are policies on cotton prices, grain and oil rations for peasants engaged in growing cotton, cotton for personal needs, chemical fertilizers and so on. At the same time, responsibility systems have been implemented. 4. Capital construction of irrigation works has been strengthened, and the irrigated land increased from 1.5 million mu to 4 million mu. 5. Scientific farming has been greatly encouraged.

CSO: 4007/75

BRIEFS

DRAFT ANIMALS--The work to raise draft animals throughout Shandong Province is newly developed. According to statistics compiled by the department concerned, the province owns 3,445,000 head of draft animals, a 10,000 head increase over the figure at the end of 1980. [SK020559 Jinan Shandong Provincial Service in Mandarin 2300 GMT 1 Nov 81 SK]

COTTON PROCUREMENT--Jinan, 20 Oct (XINHUA)--Due to the adoption of a new system under which cotton growers can sell their cotton directly to the state, a new record in cotton procurement has been set in Shandong Province this year. Within only 40 days after the cotton harvest began, the province already overfulfilled this year's procurement target of 2.74 million dan. As of 16 October, 4.05 million dan of cotton had been sold to the state. According to departments concerned, the quantity of cotton sold to the state this year will exceed that of last year, which was also a year of bumper cotton harvest. [OW231015 Beijing XINHUA Domestic Service in Chinese 0724 GMT 20 Oct 81 OW]

WHEAT SOWING--Taian Prefecture, Shandong Province, has completed autumn sowing. As of 14 October, the prefecture sowed some 3.42 million mu of wheat, overfulfilling the sowing plan by 1.5 percent. In addition, the prefecture filled seedlings in the gaps on some 970,000 mu of wheatfields. [SK190659 Jinan Shandong Provincial Service in Mandarin 2300 GMT 16 Oct 81 SK]

CSO: 4007/75

BRIEFS

PREFECTURE COTTON--Urumqi, 2 Nov (XINHUA)--Kashi Prefecture, a major cotton-producing area in Xinjiang, has reaped a good cotton harvest from over 1.1 million mu of cottonfields this year. Total output may reach 600,000 dan, an increase of over 30 percent over the last year. As of mid-October, the prefecture had procured nearly 200,000 dan of cotton, an increase of 40 percent over the same period last year. [Beijing XINHUA Domestic Service in Chinese 0059 GMT 2 Nov 81]

CSO: 4007/74

RURAL AREAS INCREASE PURCHASING POWER

OW010714 Beijing XINHUA in English 0700 GMT 1 Nov 81

[Text] Hangzhou, November 1 (XINHUA)--The purchasing power of Zhejiang Province's 33 million peasants rose 14 percent between January and September of this year as compared with the same period of 1980. For the province's city dwellers, it only went up 6.7 percent, according to the provincial statistics bureau.

Consumer goods purchased by the peasants in Zhejiang in the first nine months this year amounted to 3,150 million yuan.

A good harvest is being reaped, and collectively-run rural industry and household sideline production have grown in the province this year. By late September, the peasants had sold more than 5,000 million yuan worth of farm and sideline products to the state or at country fair markets. This averaged around 1,000 yuan for each peasant family.

Purchases of sewing machines went up 22 percent, bycicles 37 percent, and wrist watches 52 percent.

A recent survey conducted on the purchasing power of 165 typical peasant families by the Zhejiang Supply and Marketing Cooperative indicated that each household will spend an average of 900 yuan in the coming winter and spring. The families average five members each. The list of commodities they intend to purchase includes 17 percent for building materials, hardware and electrical appliances. The rest will go for food, clothing and other daily necessities.

Improving living conditions has become an urgent matter in rural Zhejiang. A survey done recently on 274 typical agricultural production teams in the province shows that 281 families, or 11 percent of the total households investigated, are now building or preparing to build new houses. Last year, some 570,000 peasant families in the province built new houses.

CSO: 4020/25

BRIEFS

LACQUER TREES PLANTED--Some 200,000 lacquer trees were planted in Jiande County, Zhejiang, this year, bringing the current number of lacquer trees in the county to 2.6 times that in the last year. The county produced a total of more than 20,000 jin of raw lacquer this year. [Hangzhou Zhejiang Provincial Service in Mandarin 0400 GMT 9 Nov 81]

PROCUREMENT CONFERENCE--The Zhejiang Provincial People's Government on 17 October held a telephone conference calling on all localities to strengthen their leadership over the procurement of agricultural and subsidiary products in order to insure the fulfillment of this year's procurement tasks. The conference was presided over by Vice Governor Chen Zuolin. Vice Governor Mou Haixiu spoke, noting that the total value of products procured in the first three quarters of 1981 reached 2.73 billion yuan, topping last year's same period by 100 million yuan. [OW231015 Hangzhou Zhejiang Provincial Service in Mandarin 1040 GMT 19 Oct 81 OW]

CSO: 4007/75

II. PUBLICATIONS

TABLE OF CONTENTS OF 'ZHONGGUO XUMU ZAZHI' NO 4, 1981

Tianjin ZHONGGUO XUMU ZAZHI [CHINESE JOURNAL OF ANIMAL SCIENCE] in Chinese No 4, 5 Aug 81 inside back cover

[Text] The Egg Yield Distribution of Layers in Different Laying Time.....Yao Jue [1202 3778], Anhui Agricultural College (1)

A Survey on Babuluke Sheep.....Lei Maochang, et al. (3)

Tests on Rapid Finishing of Crossbred Beef Cattle..... Yang Huawen [2254 0553 2429], Wang Bingchen [3769 3521 5256], Luo Zhian [4382 1807 1344] and Ma Defu [7456 1795 4395], all of the Heilongjiang Animal Husbandry Research Institute (5)

A Fattening Test of Crossing Jinnan Indigenous Cattle with Santa Gertrudis Beef Breed.....Shi Yi [2514 1355] and Jin Yongliang [7246 3057 0081], both of the Shanxi Animal Husbandry and Veterinary Medicine Research Institute; et al. (7)

Experience in Increasing Marketing Rate of Fattening Pig .....Xia Futang (9)

The Problem of Twin Births in Cattle.....Zhou Zuoyi [0719 0155 5030], Chongqing Agricultural School (10)

The More Economical Slaughter Weight of Fattening Pigs..... Zhao Ying, et al. (12)

Test of the Technology of Freezing Semen of Boars.....Wu Shijian [0702 4258 1017], Xu Dianxin [6079 0368 2450] and Liu Qianyou [0491 6197 0147], all of the Guangxi Animal Husbandry Research Institute (13)

Test on Donkey Carcass Quality.....Zhang Shujin [1728 2579 4897], Baoding Prefecture Animal Husbandry and Veterinary Medicine Research Institute, Hebei (16)

A Survey on Uterus Bicornis Pregnancy and Its Regularity .....Liu Zhenzhong (17)

The Grazing Effect of Holstein Dairy Cattle at Pasture..... Han Renyuan [7281 0088 0337], Ximeng Scientific Committee, Nei Monggol (18)

The Succession of Natural Propagation of Clover at Lianshan Zhaojiao Pasture--A Survey.....Ao Xuecheng [2407 1331 2052], Liangshan Yi Nationality Autonomous Region Agriculture Research Institute, Sichuan (19)

Test of Comfrey Grass Productivity as Compared with Other Fodder Grasses.....Hao Jingzheng [6787 2417 2398], Li Ziqiang [2621 1311 1730] and Li Heng [2621 5683], all of the Chengde Agricultural College, Hebei (22)

The Effect of Supplying Limiting Amino Acids in the Typical Ration of the East Part of Qinghai Province.....Jin Yueying [6855 2588 5391], Lu Zhaohai [7120 5128 3189], both of the Institute of Animal Husbandry, Chinese Academy of Agricultural Sciences; Liu Qiang [0491 1730], Xie Shenghao [6200 3932 6275] and Wang Wanbang [3769 8001 1620], all of the Qinghai Animal Husbandry and Veterinary Medicine Research Institute (22)

A Method for Detecting Water-retaining Capacity of Pig Muscles.....He Manyun [0149 2581 0061] and Fang Zhangming [2455 2874 2494], both of the Animal Husbandry Research Institute, Chinese Academy of Agricultural Sciences (24)

The Carcass Quality of Holstein Dairy Cows.....Wei Shanshu [7279 0810 2579], Yu Yanhu [0060 3508 3275] and Xu Xindong [1776 2450 2629], et al., all of the Department of Animal Husbandry and Veterinary Medicine, Huazhong Agricultural College (25)

Test on the Diluting Multiple of Cattle Semen.....Xu Tiezheng [1776 6993 6927], Bureau of Animal Husbandry, Shanxi Department of Agriculture; et al. (26)

The Isotonic Concentration of Ingredients of Semen Dilution and Its Calculation.....Cai Jiale, et al. (28)

The Effect of Fertility with Freezing Pig Semen.....Jiang Changzhi (30)

A Method of Boiling Uterianin Cervix Mucus for Pregnancy Diagnosis.....Zhu Xiubai, et al. (31)

The Optimal Breeding Time of Ewes.....Li Yingqi (32)

Method of Boar Mating with Three Sows.....Zhang Wei, et al. (33)

Digestibility of Lacquer Tree Seeds in Pigs and Chickens .....Zheng Jianying [6774 0494 5391], Yang Aiyun [2799 5676 0061] and Yang Huiwen [2799 1920 2429], et al., all of the Shaanxi Animal Husbandry and Veterinary Medicine Research Institute (34)

Animal Production from Grasslands in New Zealand.....Mao Wenxing [3029 2429 2502] and Ren Guotai [0117 0948 3141], both of the Bureau of Animal Husbandry, Shanxi Department of Agriculture (35)

The Correlation between Body Measurements or Liveweight and the Yield of First Lactation in Calves.....Lin Chengyu, et al. (39)

9717
CSO: 4007/50

TABLE OF CONTENTS OF 'SENGONG KEJI TONGXUN' NOS 6-7, 1981

Beijing SENGONG KEJI TONGXUN [FOREST INDUSTRY SCIENCE AND TECHNOLOGY] in Chinese No 6, 15 Jun 81, and No 7, 15 Jul 81

[No 6, 15 Jun 81 on back cover]

[Text] Detection of the Magneto Troubles..... (1)

Calculations of Main Data of the Rotator on Hydraulic Grapple of Loading Bridge..... (4)

Welding and Repairing the Spring Leaf on Trucks..... (7)

Inlet Guide Facilities for Holding Project--Dividing Booms..... (8)

Lin-36 Tractor Used in Forestry..... (9)

Production Test of Waterproof Treatment by Spraying Paraffin..... (10)

Experiment on Veneer and Fiberboard Treatment with Long-wave Infrared Radiation.....Zheng Ruixian [6774 4213 6343] and Tang Yongyu [0781 3057 5940], both of the Hunan Forestry College (15)

Cloth-bag Dust Filter: A New Effective Step for Sander Dust Removing.....Hou Kezhong [0186 0344 1813], Northeast Forestry College; et al. (20)

Development of Hydraulic Limber..... (22)

Pulling Test on the Tractor Tires..... (24)

GRU-3 Hydraulic Bucking Equipment..... (26)

A Wave Log Cutter without Sawdust..... (27)

Development of the Wood Industry of Finland in Recent Years..... (28)

Use of Solar Energy for Lumber Drying in the Federal Republic of Germany..... (31)

[No 7, 15 Jul 81 inside front cover]

[Text] Design of Woodyard Along Bay.....Qi Jitang [4359 3444 2768], Nanjing College of Industrial Processing of Forestry Products (1)

Election of Optimum Distance between Truck Hauling Logs and Load-supporting Beam of Trailer..... (4)

Several Problems in the Design of Longitudinal Ring Chain for Log Conveyance.....Wen Canxiang [2429 3605 3276], Shaanxi Forestry Survey and Design Institute (6)

Large 200 Ton Hot Press with Radio Frequency Heating..... (11)

A Brief Account of Production Line for Chipboard with Single Opening and Flat Press Process..... (14)

A Successful Trial-production of Printing Ink for Water Intaglio Printing of Emulated Wood Grain..... (17)

The Correct Use of Band-saw Blade..... (19)

A Short Note on Safety Devices of Chain Saws in Foreign Countries.....Guo Dianfu [6753 3013 4395], Harbin Forestry Machinery Research Institute, Ministry of Forestry (23)

Development of the Swathe-felling Mobile Chipper..... (26)

Application of the Techniques of Rigid Connection and Mounting of the Panels on the Floor of a Prestressed Concrete Bridge..... (28)

Preparation of Adhesive for Plywood Production..... (30)

Out-of-plane Strength and Stiffness of Dowel Joints..... (32)

9717
CSO: 4007/48

CURRENT ROSIN OUTPUT FIGURES, PLANNED INCREASES REPORTED

Hong Kong CHING-CHI TAO-PAO [ECONOMIC REPORTER] in Chinese No 41, 14 Oct 81 p 10

[Article by Liu Xiangqi [0491 4161 7871] and Huang Zhenggen [7806 2973 2704]: "China's Rosin Production"]

[Excerpts] China's rosin production has expanded during the past several years. In 1980, rosin output reached an all-time high when more than 310,000 tons were produced for a 91 percent increase over 1965. Profits and tax revenues tendered from rosin production amounted to 100 million yuan annually.

Rosin is also one of China's exports. It enjoys a very high reputation in international markets and is readily sold in more than 50 countries and territories. In 1980, China's rosin and turpentine exports earned $106 million in foreign exhange, first place among forestry product exports. China's rosin output is second only to that of the United States, making it second in the world, but it holds first place in the world for export.

Rosin is an important raw material for the chemical industry

Rosin's economic value is very high and its uses broad. It is a major raw material that is indispensable for numerous industrial units that make soap, paper, paints, printing ink, synthetic rubber, machinery and power equipment, electronic components, plastics, pharmaceuticals, printing and dyeing materials, textiles, and military equipment.

Calculations made by the units concerned show that for each 10,000 tons of rosin, an output value of 600 million yuan of light industrial products will be affected. An annual output of 300,000 tons of rosin will directly or indirectly affect an output value of 18 billion yuan of light industrial goods. This shows the important role of rosin in the national economy.

China has abundant pine forest resources and area of production are widespread. The two provinces of Guangdong and Guangxi are the main production areas, and Hubei, Huban, Jiangxi, Sichuan, Yunnan, Guizhou, Fujian, Anhui, Zhejiang, Liaoning, Jilin, and Heilongjiang provinces also accounted for a certain proportion.

China has more than 250 rosin plants.

The key to increasing rosin output lies in increased tapping of pine resin. The state annually puts 120 million yuan of funds into resin tapped by communes and brigades. In addition, it provides help in many other ways. As a result, rural people's commune, production brigade, and commune member enthusiasm for tapping pine resin is very high.

Though China's rosin production has developed a great deal, it is still very far from catching up with the needs of the domestic and export markets. Currently total rosin output is only 310 tons, yet a minimum of 400,000 are needed annually, so annual output is able to satisfy only between 70 and 80 percent of demand. At the present time, the Ministry of Forestry is in process of actively planning and preparing the construction of pine resin forest bases, intending to build 2 million mu of wetland pine base forests annually in Guangdong, Guangxi, Fujian, Jiangxi, and Hunan provinces or autonomous areas. After a period of effort, China's rosin production can be expected to show new development.

9432
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TITLE: "Studies on the Biology of *Dicrocoelium lanceatum* in Xinjiang Autonomous Region"

SOURCE: Beijing DONGWU XUEBAO [ACTA ZOOLOGICA SINICA] in Chinese No 3, Sep 81 pp 265-273

TEXT OF ENGLISH ABSTRACT: Xinjiang Autonomous Region is an endemic area of dicrocoeliosis. The main distributional quarter of the disease lies in the northern portion of the autonomous region. Our present communication based on the survey conducted in the autonomous region reports for the first time on the finding of the responsible molluscan and insect intermediaries of *Dicrocoelium lanceatum*.

[Continuation of DONGWU XUEBAO No 3, Sep 81 pp 265-273]

They are *Succinea snidghe* and *Formica lugubris*.

In Baiyanggou, in the Urumqi Xian, sheep were reared on a mountainous plateau from 1500 feet upward to the spruce-forest-belt at 2000-2800 feet high or even on grassy peaks towering up to 3000 feet high, devoid of any trees. It was on the middle-spruce-forest area we collected a number of land snails belonging to the species *Succinea snidgha* living among grasses attaching to stones near some flowing water. In this characteristic biotop the dominant species of ants, *Formica lugubris*, build their nests on the ground among shrubs or tree roots.

In the areas of the Baiyanggou the endemicity of dicrocoeliosis is considered not especially high and the numbers of sheep are not many. The rate of infection is about 73 percent, and the intensity of worm burden is about 30-420 per sheep. During July, in addition to *Succinea snidgha* there occurs another species of land snail, *Macrochlamys kasschstani*, 4189 of which were examined with negative results, while 6977 *Succinea snidgha* were examined with 6 positives. Of these six positives, only one snail contained mature daughter sporocysts and cercariae. Two snails contained mother sporocysts and three contained moderately matured daughter sporocysts. Ants collected from different altitudinal levels numbered up to 89,467 individuals. Only those collected from the middle belt of forested areas were found to be infected. Among 36,955 *Formica lugubris* examined, only 3 were found to contain the metacercarial cysts. For this species of ants, 10,391 larvae

[Continuation of DONGWU XUEBAO No 3, Sep 81 pp 265-273]

and popae were examined without finding metacercarial cysts. Our observations made on the structure of the larval *Dicrocoelium lanceatum* indicated that their morphology resembles closely that described by Neuhaus (1936), but the structure of the cercariae bears some significant variations to that as observed by the authors in Shanxi Province with regard to the granular content of the penetration glands.

Specimens collected from different places in Xinjiang Autonomous Region, as well as those from elsewhere, exhibited two forms of *Dicrocoelium lanceatum*, one with lancealate body form and slightly obliquely-placed testes with the shapes of testes and ovary being more-or-less round, and the other one with broad body form and distinctly obliquely-placed testes with the shapes of testes and ovary being lobate. They were tenttatively designated as two varieties, *Dicrocoelium lanceatum lanceatum* and *Dicrocoelium lanceatum platynosomum*.

9717
CSO: 4009/89

AUTHOR: ZHAO Yue [6392 6390]

ORG: Nanfan Machine Works, Jiang County, Shanxi Province

TITLE: "Study of Some Problems in the Design and Application of Large-scale Internal Combustion Pump"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 3, 25 Sep 81 pp 43-52

EXCERPTS FROM ENGLISH ABSTRACT: The internal combustion pump (ICP) has a higher theoretical heat efficiency, can use various kinds of solid fuel and has low pumping costs. So the use of ICP is in accordance with the national policy on energy sources. The ICP can be used for farm irrigation where the local conditions are suited for it.

The splashing of water drops seriously affects the efficiency of ICP. By theoretical analysis, the cause of splashing and the method for retraining have been found.

By using the method of multi-point, high-energy ignition, the detonation in the large-scale ICP can be controlled effectively, thus increasing the reliability of the pump.

[Continuation of NONGYE JIXIE XUEBAO No 3, 25 Sep 81 pp 43-52]

In this paper, the idea of "suspension pressure" is introduced as the important design parameter of the critical part of ICP--the air-removal spacer.

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TITLE: "Pulse Pump"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 3, 25 Sep 81 pp 53-61

TEXT OF ENGLISH ABSTRACT: The purpose of this paper is to suggest the theory of the pulse pump to introduce the experimental results of the models of the air-operated pulse pump and to estimate the perspective of the development of the pulse pump and its possible applications.

The pulse pump is a new type of pump in which the fluid successively flows out in one direction by means of the pulse effect in the uniflow pipe. The flow pattern is simple in this pump, so that the efficiency of the energy transformation will be higher and the head range obtained in the single stage may be wider as well. In this pump the flow is successive, so that the flow rate is higher without any danger of cavitation.

[Continuation of NONGYE JIXIE XUEBAO No 3, 25 Sep 81 pp 53-61]

We have investigated and made models of the air-operated pulse pump since 1976. The theory suggested has been basically proved by repeated tests and measurements.

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TITLE: "Fatigue Fracture Analysis and Improvement of Front Axle on Tractor Model 50"

SOURCE: Beijing NONGYE JIXIE XUEBAO [TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL MACHINERY] in Chinese No 3, 25 Sep 81 pp 15-20

TEXT OF ENGLISH ABSTRACT: Tractor model 50 is one of the Chinese tractor models. Fatigue fracture of the front axle has often occurred in use. In order to improve design, an indoor simulating fatigue test was made on the basis of a drawn-up program for load spectrum. The life span of the new structure was compared with the old one. Testing results showed that the place and type of fatigue were the same as in practical use. Thus the test was precise and believable. The main cause of fatigue fracture was that the old cast steel welding structure often had faults and cracks. The life span of the new structure is 2.8 times more than the life span of the old one. This result is satisfactory for the users, and the metal consumption is the same. The new structure has less detail and is easier to manufacture with less processing. Therefore, the cost is decreased by 9 percent compared with the old one. The author suggests that the front axle of tractor model 50 may be replaced by the new steel-pipe structure with special cross section.

9717
CSO: 4009/89

AUTHOR: None

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TITLE: "Chemical Detasseling Technique of High Yield Seed Preparation of Hybrid Rice"

SOURCE: Guangzhou GUANGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 5, 8 Sep 81 pp 5-9

ABSTRACT: The Cooperative Group, composed of the Research Institute of Rice of Guangdong Provincial Academy of Agricultural Sciences, the Production Division of the Guangdong Provincial Overseas Chinese Farm Management Bureau, the State-operated Pingsha Overseas Chinese Farm, the Fanyu County Research Institute of Hybridization, and the Shunde County Lungjiao Commune, obtained expected results from the project of using chemical detasseling technique for high yield seed preparation of hybrid rice in late 1980, with the purity and the yield both surpassing the historical record in the province. Over areas varying from 1.09 to 140 mu, the yield was 68-146.5 jin/mu and the purity rate was over 90 percent. Factors affecting poor purity and low yield of the past are analyzed in terms of the advantages of the technique of chemical detasseling. Further improvements suggested in the paper include faster and better technique of spraying and reducing the density of the chemical. It is hoped that the yield may break the 200 jin/mu barrier in the future.

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TITLE: "Determination of White Leaf Withering Disease Resistance Spectrum of 21 Rice Resources Breeds"

SOURCE: Guangzhou GUANGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 5, 8 Sep 81 pp 16-17

ABSTRACT: Identification and assessment of the disease resistance spectrum of the resources breeds is the foundation for selective breeding of disease-resistant breeds of rice. In 1978, the authors recommended a group of broadspectrum disease resistant breeds and in 1980, using 4 groups of pathogens of the province of different degrees of toxicity, the disease resistant spectrum and the economic properties of 21 resources breeds were reexamined. All these belong to the broadspectrum antigen group and most have the resistant genes of Xa_4, Xa_5, or Xa_7, while a few have yet to be clarified. Evaluating from the compound viewpoint of disease resistance and economic properties, following the test, 12 of these breeds are highly recommended in the paper as good sources of resistance. A table is included listing the resistant reactions to the 4 groups of pathogens and major economic properties of all 21 rice breeds tested.

6248
CSO: 4009/88

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TITLE: "The Analysis of the Economical Characteristics of a Hybrid from Two Ecological Types of Carps"

SOURCE: Shanghai SHUICHAN XUEBAO [JOURNAL OF FISHERIES OF CHINA] in Chinese No 3, Sep 81 pp 187-198

EXCERPTS FROM ENGLISH ABSTRACT: *Cyprins carpio yuanjian* Wu et al. is a local type of *Cyprinus carpio rubrofuscus* Lacépède. It lives in rivers and lakes on the plateau of the subtropical region. The Red Purse Carp is a variety of the common carp, living in the still waters of the mountainous areas in the basins of the middle and lower parts of the Changjiang River. It is also a district variety. In 1974, the two types of carps, the Yuangjiang Carp (male) and the Red Purse Carp (female) were artificially crossed and their F_1 hybrids display marked heterosis.

The F_1 hybrids show that the ratio of body length to body depth is from 2.35 to 2.55, higher than that of their parents. Individual hybrids can grow to an average

[Continuation of SHUICHAN XUEBAO No 3, Sep 81 pp 187-198]

size of about 1000 g within one year (under the condition of polyculture in a density of 30-60 individuals per mu). The growth rate of the hybrid is much higher than that of the Red Purse Carp (52.3 percent), that of the Yuanjiang Carp (28.05 percent) and that of the wild carp in the Changjiang River (45.5 percent). It shows that the difference between the hybrids and their parents is highly significant ($P < 0.001$); the fish flesh percentage of the yearling is 77.8 percent on the average, the fat content in the muscles is 3.68 percent, the protein content is 18.37 percent. The adults of the hybrids are easily harvested. They also possess many other economical importances, such as high survival rate, disease resistance and high fertility.

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TITLE: "A Study on the Detection of Mutation Causes from Canned Fish"

SOURCE: Shanghai SHUICHAN XUEBAO [JOURNAL OF FISHERIES OF CHINA] in Chinese No 3, Sep 81 pp 229-234

TEXT OF ENGLISH ABSTRACT: Five different kinds of canned fish were tested on petri plates with two specially-constructed mutants of *Salmonella typhimurium*--TA98 and TA100 (Ames Test). Mutagenic activity was detected in the smoked fish of the five samples. It showed that this processed fish contained base-pair substitution mutagens which required metabolic activation.

The smoked fish which was clearly positive in the test should be considered as causing potential human health hazards, and should be thoroughly tested in animal systems. These studies have shown that the smoked fish might possible present traces of polycyclic aromatic hydrocarbons.

9717
CSO: 4009/93

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TITLE: "A Preliminary Study of the Barley Yellow Mosaic Disease in Yangzhou District"

SOURCE: Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 3, Sep 81 pp 153-157

TEXT OF ENGLISH ABSTRACT: Since 1974, a new barley disease, barley yellow mosaic, has been noticed in the Yangzhou District following the cultivation of Early Mature No 3. According to the experiments carried out during 1975~1979, it was revealed that this disease was distributed by the diseased roots and infested soil, but no seed transmission occurred. The infectivity of the infected soil was the highest at a layer of 5~10 cm below the soil surface. The optimum soil temperature for the infection of the autumnal barley seedlings was at 9.0 ~ 16.1 °C. Certain environmental factors influencing the disease development were studied. It was suggested that adequate postponement of seeding time, a rational system of crop rotation and reasonable application of fertilizer might effectively control the disease.

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TITLE: "Forecasting the Occurrence of Pink Bollworm by Using Gossyplure Attractant"

SOURCE: Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 3, Sep 81 pp 171-177

TEXT OF ENGLISH ABSTRACT: According to the results of tests conducted in Shaoshan, Zhejiang, during 1975-1980, it is found that forecasts of the occurrence of pink bollworm male adults by the use of Gossyplure attractant are better than those using conventional methods.

The relationship between the amount of pink bollworm adults, the precipitation and the percentage of damaged green bolls may be described as follows:

$$\hat{Y} = 46.843 + 0.0176X_1 - 0.1235X_2$$

Here X_1 is the number of pink bollworm moths; X_2 is the precipitation; and Y is the

[Continuation of ZHIWU BAOHU XUEBAO No 3, Sep 81 pp 171-177]

percentage of damaged green bolls, which is graded at three scales: severe (Y > 50 percent; medium (Y = 35-50 percent) and slight (Y < 35 percent).

The following measures regarding the control index in terms of the total amount of moths per pot are confirmed by tests to be advisable: Insecticides should be sprayed in the cotton storehouse or on the cotton stalk piles when the overwintering generation moths reach 300, and this should be prepeated thereafter every 7 days until the end of the first-generation moths' emergence. Insecticides should also be sprayed when the second generation moths reach 150, 400 and 700 moths, and when the third generation moths reach 100, 250 and 400. Spraying in accordance with the levels of male moths may thus bring about more effective results with less expense.

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TITLE: "Studies of Sclerotinial Rot of Soybeans"

SOURCE: Tianjin ZHIWU BINGLI XUEBAO [ACTA PHYTOPATHOLOGICA SINICA] in Chinese No 3, Sep 81 pp 19-24

TEXT OF ENGLISH ABSTRACT: Sclerotinial rot is an important disease in the soybean production areas of the northern part of China. Recently, it caused great losses due to several epidemics. The host range of soybean sclerotinial rot is very wide. According to survey and inoculation tests, there are 85 species of host plants, which belong to Leguminoceae, Compositae, Cruciferae, Chenopodiaceae, Euphorbiaceae, Liliaceae, Amaranthaceae, Umbelliferae, Solanaceae, Cucurbitaceae, Plantagiaceae, Polygonaceae, Portulacaceae, Moraceae, Gramineae, Papaveraceae, Malvaceae, Convolvulaceae, Rosaceae, Labiatae, etc. Among these hosts, 38 species have been reported previously as hosts of sclerotinial rot of Chinese rape, and the other 47 species are new host plants of this fungus in China. Among them, 25 species were found in natural infection while the remainder were induced artificially.

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TITLE: "Preliminary Study on the Factors of Horizontal Resistance of Eight Inbred Lines of Corn to *Helminthosporium maydis*"

SOURCE: Tianjin ZHIWU BINGLI XUEBAO [ACTA PHYTOPATHOLOGICA SINICA] in Chinese No 3, Sep 81 pp 43-48

TEXT OF ENGLISH ABSTRACT: Eight inbred lines of field corn (*Zea mays*) differed in reaction to *Helminthosporium maydis* race O in the field plot tests. The factors

[Continuation of ZHIWU BINGLI XUEBAO No 3, Sep 81 pp 43-48]

correlated with gross reaction to this fungal race were mainly number and size of lesions, and quantity of sporulation on each lesion. None of these factors, however, was correlated with the degree of resistance to this fungus by these lines in the field. But a combined effect of these three factors (i.e., number and size of lesions and quantity of sporulation) showed significant correlation with the degree of susceptibility of the lines.

The results lead to the speculation that the resistance of field corn inbreeds in China to *Helminthosporium maydis* is most likely horizontal in nature.

9717
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END

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25 November 1981

China Report

AGRICULTURE

No. 175

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25 November 1981

CHINA REPORT
AGRICULTURE

No. 175

CONTENTS

I. GENERAL INFORMATION

National

Buying and Selling of Private Land
(Various sources, various dates) 1

Fujian County
Hunan County

System of Responsibility in Water Conservancy Projects Explained
(Song Lusheng, Guo Shaoyu; NONGYE JINGJI WENTI, 23 Sep 81) 3

Erosion Control in Northwest China Reported
(Various sources, various dates) 8

Loess Plateau Erosion Control
Silting of Hydropower Dam, by Li Wei
Ningxia Afforestation Efforts, by Wang Guanghua

Anhui

Briefs
Anhui Prefecture Agricultural Output 15

Heilongjiang

Briefs
Soybean Production 16

Jiangsu

Briefs
Prefecture Agricultural Harvest 17

Jiangxi

Jiangxi Holds Emergency Meeting on Autumn Harvest
(Jiangxi Provincial Service, 5 Nov 81) 18

Jilin

Briefs
Soybean Production 20
Autumn Harvest 20
Agricultural Technology 20
Tractor Purchase 20

Liaoning

Briefs
Grain Production 21

Shandong

Limitations of Land Use on Northwestern Shandong Plain Explained
(Guo Huancheng, Xu Zhikang; ZIRAN ZIYUAN, Sep 81) 22

Shanxi

Regular Farming of Private Plots by Same Individuals Encouraged
(Wang Anguo; SHANXI RIBAO, 23 Sep 81) 43

Shanxi Improves Competitiveness of Small Plant Nitrogenous Fertilizer
(SHANXI RIBAO, 30 Sep 81) 44

Markets Open, by Geng Tian, Tai Xian
'SHANXI RIBAO' Commentary

Instructions Given for Planting Winter Wheat Throughout Shanxi
(Li Huanzhang; SHANXI RIBAO, 23 Sep 81) 46

Wheat Farming Techniques Demonstrated
(Guo Bo; SHANXI RIBAO, 21 Sep 81) 48

Raising of Large Livestock Animals Encouraged in Linfen Prefecture
(SHANXI RIBAO, 23 Sep 81) 49

Sichuan

Chengdu Takes Flood Prevention Measures
(Sichuan Provincial Service, 4 Nov 81) 50

Zhejiang

Briefs
Bumper Tea Harvest 51

ABSTRACTS

AGRICULTURAL EXPERIMENTATION

YUANZI:ENG NONGYE YINGYONG [APPLICATION OF ATOMIC ENERGY IN AGRICULTURE], No 3, 17 Sep 81 52

AGRICULTURAL EXPERIMENTS

NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER], No 9, 17 Sep 81 55

AGRICULTURE SCIENCE

YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY], No 5, 25 Sep 81 56

HYDROGEOLOGY

SHUIWEN DIZHI GONGCHENG DIZHI [HYDROGEOLOGY AND ENGINEERING GEOLOGY], No 5, 15 Sep 81 58

SCIENCE OF SOIL FERTILIZATION

TURANG TONGBAO [JOURNAL OF SOIL SCIENCE], No 4, 5 Aug 81 62

I. GENERAL INFORMATION

BUYING AND SELLING OF PRIVATE LAND

Fujian County

OW110243 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 10 Nov 81

[Text] The (Puqi) production brigade of the (Quqi) commune in Liancheng County strengthens leadership over housing construction by commune members. The 29 new houses with 204 rooms built this year in the brigade have not occupied any cropland. With the development of agricultural production in recent years, the member of the (Puqi) brigade have generally increased income and many commune members and cadres have built new houses. In order to protect cropland, the brigade set up a housing construction leading group. It has explicitly stipulated that new houses can be built only on hillsides, wasteland or the foundations of old houses; that no one is allowed to build houses on cropland and this stipulation applies to both collectives and individuals. It has also stipulated in explicit terms that individuals who want to build new houses must submit their application for democratic discussion by cadres and members of production teams and for examination and approval by the housing construction leading group of the brigade, that they must build the houses on hillside land or wasteland allocated to them.

(Hua Jinfa), a commune member, at first planned to build a house in a field. The brigade quickly talked him into changing his mind and helped him in selecting level land on a hillside near the village and using the earth on the slope to build walls. In this way, he saved labor and material and occupied no cropland. (Hua Jinfa) was greatly satisfied.

The brigade-run brewery at first planned to build a brewing house on 2 mu of cropland. The housing construction leading group helped it in making a new plan, selecting hillwide land and buying, for some 400 yuan, a commune member's small lot, site of an old house, for the site of the brewing house. [Bing yong liao si bai duo yuan gou mai liao yi hu she yuan xiao kuai lao fang ji di zuo chang zhi 1670 3938 0055 0934 4102 1122 0337 6356 6314 0055 0011 2073 4357 0765 1420 1040 5071 2075 1015 0966 0254 1681 0968] So the brewery has not occupied any cropland either.

This year, eight brigade and team cadres have also built new houses. All of them took the lead in abiding by the brigade's stipulations and built new houses on the foundations of their old houses. (Hua Jintao), secretary of the brigade party branch, built a six-room house on the foundation of his old house and did not occupy collective land.

Hunan County

HK120317 Changsha Hunan Provincial Service in Mandarin 1100 GMT 11 Nov 81

[Text] The Yongshun County CCP committee recently dealt severely with the illegal behavior of a few people on (Aiping) brigade of (Aiping) commune in buying and selling land. (Aiping) brigade is located near the county seat. Since 1979, 43 instances of buying and selling land have occurred on this brigade, involving a total area of 28 mu, including 18 mu of paddy land. There are two reasons for this state of affairs. First, some commune members were unable to clarify the relationship between responsibility systems and ownership systems. They erroneously held that to institute responsibility systems meant to divide up the land and go it alone, with everyone owning his own land and doing what he liked with it. Secondly, a few cadres and workers in county units arbitrarily bought land to build houses, heedless of the party policies.

On discovering this problem, the Yongshun County CCP committee promptly sent people to carry out investigations, and also held a gathering of cadres and personnel concerned of couty units. The gathering made the following announcements: buying and selling land is illegal, all previous buying or selling or land by units and individuals is void, and the land is to be immediately taken back into public ownership; the money that changed hands in these transactions is to be immediately confiscated and turned over to the state; the land recovered in this way is to be handed over by the brigade to peasant households with large numbers of laborers and little land, who will be made responsible for cultivating it; work is to be stopped on all house construction on such land; where houses have already been built, the commune will set a deadline for moving out; some houses will be sold back to the public at low prices; those cadres and peasants who have bought and sold land must conduct self-examination and be criticized, educated, or disciplined according to the seriousness of the case and their attitude.

CSO: 4007/81

SYSTEM OF RESPONSIBILITY IN WATER CONSERVANCY PROJECTS EXPLAINED

Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese No 9, 23 Sep 81 pp 42-44

[Article by Song Lusheng [1345 7627 3932] and Guo Shaoyu [6753 4801 4416]: "Reforms in the Administration and Management of Water Conservance; Jindongnan Prefecture in Shanxi Province Institutes Survey of System of Responsibility for Water Conservance Management"]

[Text] In order to meet the developing needs of water conservancy management, and the new situation following institution of various systems of responsibility linking compensation to production, Jindongnan Prefecture in Shanxi Province has courageously carried out a reform of its water conservancy management, promoting a system of responsibility for water conservancy management throughout the province, which has effectively increased the economic benefits of existing water conservancy projects. As of the present time, 62 percent of the area's more than 19,000 water conservancy projects have instituted various systems of responsibility for management of water conservancy.

Proposal for System of Responsibility

Since the founding of the Chinese People's Republic, the irrigated area of southeastern Shanxi has expanded from 45,000 mu to the present 1.2 million mu in a remarkable achievement. Nevertheless, as a result of the damage done by "leftist" mistakes, for a long period of time problems have existed in failure to care about economic effectiveness in water conservancy work. Since the beginning of the 1960's, the state has annually disbursed about 30 million yuan for investment in water conservancy in the region, and over the past 20 years grain output in the region has increased by more than 700 million jin for an annual incremental increase of more than 35 million jin. For each jin increase in grain output, however, investment in water conservancy by the state alone has amounted to 0.80 yuan. One of the reasons for this state of affairs has been blind and foolhardy action, waste of money and manpower, and unconcern about economic effectiveness, which has resulted in towering waste. Another reason has been the "eating out of a large common pot", and "drinking out of a large common kettle" in management, and poor management over a long period of time, which has greatly reduced the economic effectiveness of projects. Since the Third Plenary Session of the 11th Party Central Committee, the burgeoning in the farflung rural villages of various forms of a system of responsibility linking compensation to output has raised new problems for water conservancy management. Problems arising at that time are as follows: Communes and production brigades leveled electric irrigation station irrigation ditches, locked up facilities and

used them no longer. Some communes and brigades divided water conservancy projects and equipment so they could not be used for irrigation. Following institution of the linking of output to the workforce and contracting for production with individual households, some communes and brigades fought over water. No one looked after the water conservancy facilities, and there was so much trouble no one could water his fields properly.

In view of these circumstances, the Jindongnan Prefecture CCP Committee, government administrative offices, and water conservancy departments conducted thoroughgoing investigation and study, promptly summarized the experiences of places like Gaoping County in instituting a system of responsibility for water conservancy management, and used this experience as an important integral component in the institution and perfection of various forms of a system of responsibility for agricultural production. Last winter and this spring, three separate special meetings were held to study and make assignments of work in promoting a system of responsibility for water conservancy management.

Experience has shown that institution of a system of responsibility for water conservancy management is a necessity in meeting new situations in water conservancy management in thefarflung rural villages following institution of various systems of responsibility linking compensation to production, and like the various systems of responsibility for agricultural production, it has been welcomed by the broad masses.

Forms of a System of Responsibility

Starting with the fundamental characteristics of water conservancy work, and adhering to the principles of level by level and centralized management, in its system of responsibility for management of water conservancy, Jindongnan Prefecture adapted general methods to local situations, adopting the following forms:

1. Level by level contracting; placing responsibility on individuals; calculation of remuneration for fixed quotas; and awards for overfulfillment or penalities for underfulfillment. Implementing these systems of responsibility were large and medium size catchments, irrigation areas of more than 10,000 mu, and large and medium size machinery and power irrigation stations, for the most part. Currently, projects throughout the prefecture on which these forms of a system of responsibility have been instituted number 583. These are places like the Fushan irrigation area in Gaoping County, which comprises 1 reservoir of 2 million cubic meters capacity, dams at two places, 1 1000-meter long water diversion tunnel, and three irrigation ducts totaling 31 kilometers in length. The benefitted area amounts to more than 12,000 mu and involves 4 communes, 22 production brigades, and 104 production teams. they have established an administration bureau in the irrigation area; the communes have set up management stations; the production brigades have set up management sections; and production teams have set up contract irrigation units in four levels of management. They have set up level by level contracting, various norms, placed responsibility on individuals, and formulated a criteria for awards and penalties, with awards for overfulfillment and penalities for underfulfillment.

2. Contracting with teams and units, and calculation of compensation being linked to quality of project management, number of times each mu is irrigated, and wetlands output. Instituting this kind of a system of responsibility are usually projects managed by communes and brigades. Right now this form of a system of responsibility

is in use on 5,220 projects throughout the prefecture. In the case of Beishidian Commune in Jincheng County, for example, 16 people have been specially organized to manage the commune's 5 water conservancy projects. Wages for these management personnel fluctuate according to how much output from wetlands is above or below the 600 jin per mu level. For fields producing less than 600 jin per mu, wages are 34 yuan per month. For between 600 and 800 jin, wages are 36 yuan per month. For more than 800 jin per mu, monthly wages are 38 yuan. The advantage of this method is that it links compensation paid to management personnel to how well the fields are irrigated and the amount of output, in a change from the former practice whereby all anyone carred about was opening the sluice gates to release water and not caring about earnings.

3. Specialized contracting and fixed quota contracting for work. Mostly it is production brigade and production team individual water conservancy projects and human and animal potable water projects that institute this system of responsibility. Currently more than 3,500 projects in the prefecture have instituted this form of a system of responsibility. The Weijiayao Production Brigade of Caocun Commune in Wuxiang County formerly irrigated an area of more than 350 mu from a single electric irrigation station, but because management was not good, the wetlands came to be farmed as drylands; money was spent and labor wasted, but no increase in output resulted. Last year this brigade contracted management of this electric irrigation station to two commune members, designated them responsible for 500 man-days of labor. In order to cover expenditures for electricity, maintenance and repairs, and subsidies for the electric irrigation station, the production team set aside three mu of wetlands for which it made work contracts, requiring that should expenditures for the irrigation station exceed output from the three mu, no restitution would be made, but 40 percent of any surplus would go to the two managers. Last year, these two commune members not only did a good job of irrigating 350 mu of wetlands, but also grew mulberry saplings on the three mu of "station support fields" earning more than 1,200 yuan thereby. After meeting the station's expenses, they had a surplus of 300 yuan. Last year this brigades 150 mu of wetland wheat produced yields of 100 jin per mu; the 90 mu of autumn fields produced yields of 200 jin per mu, and there were 110 mu of mulberry saplings. Earnings amounted to 46,000 yuan. People said that overall contracting for the water conservation work and the three mu of "station support fields" brought increased output and increased earnings for the entire brigade.

4. Contracting for individual projects with full awards and full penalties. Instituting this system of responsibility are diversified operations and small tracts of wetlands belonging to production teams in irrigation areas, for the most part. Currently 983 projects in the prefecture are using this form of a system of responsibility. The Fushan and Pinghe irrigation regions in Gaoping County have instituted specialized contracting for earnings and expenditures of units in the irrigation area such as diversification, cement unit, automobile unit, maintenance and repair unit, fish in raising unit, and farming unit in a system of responsibility of total award and total penalty. Xibao Brigade in Songcun Commune, Changzi County contracted with four old commune members and three women the management of a pump well (powered by a water wheel) and the 20 mu of wetlands it serves, which the seven people farmed. The brigade stipulated that the contractors would be responsible not only for all expenses involved, but also for payment each year of 4,000 yuan, one workpoint being recorded for each 2.50 yuan. If they earned more, it would be theirs, but if they earned less, they would have to make it up themselves.

5. Specialized production, entreprenurial management, specialized tasks, specialized contracting, and institution of profit sharing or overall contracting of work for output value. Mostly hydropower stations, fish farms, and users of water for industrial purposes have instituted this form of a system of responsibility. There are quite a few communes and brigades in the prefecture that have linked production to specific workers or contracted production with individual hosueholds. Some have trial operated water conservancy irrigation and hydropower production enterprise companies. Qudi Brigade of Duanshi Commune in Qinshui County instituted the linking of output to individual workers, after which it put into effect with water customers the providing of water a fixed number of times according to needs, calculating the charge for water on this basis. This both conserved water and increased economic income, and resulted in expansion of the irrigated area. This spring, during the great drought, there was no drought on the brigade's 660 mu of wetlands. The Chixiang Brigade of Sanjia Commune in Gaoping County instituted enterprise management for a potable water project for people and livestock, and instituted calculation of water costs for agricultural use of water by households with whom production had been contracted, and for use of water for industrial sideline occupations. Their annual earnings came to 1,500 yuan, and an after-expenses surplus of more than 200 yuan. Use of these measures solved the drinking water problem for 1,700 people in the village, and made optimum use of economic benefits. In the fight against drought this spring, water was supplied to contracting households for the dibbling of 800 mu of corn, for the watering of 30 mu of wheat, and for the watering of 20 mu of ground to be planted in the fall.

Advantages of the System of Responsibility

Jindongnan Prefecture put into effect various forms of a system of responsibility not very long ago. Further summarization of experiences and steady perfection and improvements are still required. However, the advantages accruing from institution of these systems of responsibility have already been clearly revealed:

1. Surmounts the situation of eating out of a "large common pot" in management; gives expression to the policy of greater returns for greater work. This method has increased managers' sense of responsibility; has fired up their enthusiasm; and has promoted the tapping of potential and the fitting out of water conservancy projects. After Changzi County instituted a system of responsibility in water conservancy management, in the course of a single spring season more than 100,000 meters of permanent irrigation ditches were renovated; 55 old wells were restored to operation; 350 pieces of water conservancy equipment, which had been broken for many years, was repaired; and more than 3,500 mu of wetlands were revived. Liujia Production Brigade of Beicheng Commune in Changtai County had once had 32 sets of water pumping equipment, more than 18 sets of which had been lost or damaged as a result of not assigning people to care for them, unclear responsibility, and bad management. After institution of a system of responsibility for water conservancy management, they assigned persons to machines, maintained accountings for each machine, and linked calculation of compensation to output. They restored to operation and fitted out all of their pumping equipment for a 100 percent rate of operation, and took care of all of their 2,400 mu of wetlands.

2. Reduces expenditures and Cuts Down on Various Costs. Irrigation costs declined. Statistics from Gaoping County, which instituted a system of responsibility in water conservancy management fairly early, showed a general decrease last year by about 50 percent in management costs, maintenance and repair costs, electricity costs, and subsidies for the county's water conservancy projects. Last year the Hougu

Production Team of Shuidong Commune in Pucheng County contracted to commune member Sang Xulin [2718 4872 2651] and his wife management of a water conservancy pumping and storage project. Under the identical conditions that obtained during the previous year, water costs for the irrigation of land so many times per mu dropped from 1.39 yuan to 0.72 yuan, a decline of 49 percent.

3. Promotes Development of Diversification in Water Conservancy. Because of the development of diversification in water conservancy, numerous water conservancy project management units have realized self-sufficiency with a surplus in management expenses. The three irrigation areas in Gaoping County in Fushan, Danhe, and Xuhe, each of which has more than 10,000 mu, formerly depended on the state to subside their management costs. Last year, however, they instituted specialized contracting and the linking of calculation of compensation to output value in their diversified cement plant and fish farm units, achieving, as a result, self-sufficiency and surplus in the management expenses of the three irrigation areas. Last year income from diversification in the Yongjin irrigation area of Licheng County amounted to 200,000 yuan. In addition to achieving self-sufficiency in expenditures for management costs, the area was able to use some funds for maintenance and repair of the project.

4. Has Fully Used Qualified Specialists. Formerly, Taibei Production Brigade of Tinghepu Commune in Licheng County was engaged in a "mass rally war" devoting large numbers of people to the construction of water conservancy. Last year, following the fitting out of the Yongjing irrigation ditch and branch ditches, and institution of specialized contracting, the production brigade increased the number of "indigenous experts" and made improvements in work procedures involving running water for concrete, for a doubling in work efficiency to earn an award for excess output. Formerly the Fushan irrigation area in Gaoping County lacked qualified scientific experiment specialists, which impaired scientific irrigation. Last year following institution of a system of responsibility, work tasks and functions were divided up and three people contracted for management of the irrigation experiment station. They assigned specific people to specific functions, diligently studied, and ran repeated tests, and within a year, they set irrigation norms for corn, millet, and wheat crops, excellent experimental results being obtained in scientific use of water. They also wrote a summary of their scientific experiments, making a contribution to increased agricultural output.

5. Benefits Implementation and Perfection of Various Systems of Agricultural Responsibility and Arouses Commune Member Initiative in Development of Small Water Conservancy Projects. Some mountain cabins in Qinshui County put into effect contracting for production with individual households after which commune members themselves set to work to dig mountain springs, sink wells for use during drought, and install 48 animal-powered water wheels for 48 small water conservancy projects. At Lichuan Commune in Jincheng County, after 32 households of commune members made special contracts for the production team's vegetable garden, they then resorted to various means to enlarge the wetland area by 32 mu. A commune member in Liushu Brigade, Guolin Commune, Changzi County made a specialized contract for 12 mu of economic crops after which he personally dug a well to turn 12 mu of drylands into wetlands.

9432
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EROSION CONTROL IN NORTHWEST CHINA REPORTED

Loess Plateau Erosion Control

Taiyuan SHANXI RIBAO in Chinese 23 Sep 81 p 2

[Text] The problem of how to control erosion of the loess plateau is a major one of concern to millions upon millions of people. In late August, the Ministry of Forestry held loess plateau afforestation on-site meetings in Ji County in Shanxi Province and in Chunhua County in Shaanxi Province. These conferences exchanged experiences on problems of how to do a good job of building the loess plateau shelter forest system, and discussed future tasks and methods.

Serious Problems The Loess Plateau Faces

The loess plateau is located in the middle reaches of the Yellow River where soil erosion is a serious problem that has come down through history. In the more than 130 counties (or banners) that are part of the loess plateau area, the area of erosion is approximately 280,000 square kilometers from which 1.6 billion tons of silt annually flows into the Yellow River. If the cultivated layer of farmland is calculated as being 30 centimeters thick, this means that the equivalent of 5 million mu of the cultivated layer of farmland is annually washed away as silt. It is estimated that every ton of loess contains 23 kilograms of nitrogenous, phosphate and potash nutrients. Extrapolated, this means that the silt that is annually washed away contains 36 million tons of fertilizer. This situation has wreaked havoc with production conditions on the loess plateau. At the same time, large quantities of floodwaters flush the silt downstream where it accumulates in reservoirs and watercourses, creating serious threat to areas in the lower reaches. The great dikes of the Yellow River that stretch for a thousand li grow higher and higher year after year creating a passive situation of "the greater the height the greater the danger, and the greater the danger, the greater the height." In Shanxi Province alone, reservoirs built along the Yellow River system annually lose about 50 million cubic meters of their water storing capacity. Because of the constant scouring of the surface soil of farmland on the loess plateau, soil fertility is thin and outputs low. In order to solve their food problem, the masses have no choice but to indiscriminately cultivate hillsides, do widespread farming for meagre harvests. As a result, a vicious cycle of, "the greater the cultivation, the more meagre, and the more meagre, the greater the cultivation."

The 28 counties in the western mountains of Shanxi Province that are a part of the loess highlands account for one-third of the province's total land area, and one-

third of the province's total land area, and one-fourth of cultivated land in the province. The population here amounts to 14 percent of the total for the province, but grain output amounts to only one-seventh of the total for the province. For a long time, the standard of living of the masses here has been the lowest in the province.

Many reasons account for this state of affairs. Looked at objectively, most important is the serious erosion, and the major reason for the erosion is the sparsity of forest plant cover. Natural secondary growth forests in all the loess plateau amount to 28 million mu, and this plus 20 million mu of man-made forests totals 49 million mu, or only 5 percent of the total area. Therefore doing a good job of bringing the loess plateau under control and vigorous advocacy of planting trees and growing grass to control erosion and to build a fine ecological system not only relates to building of the four modernizations and improving the livelihood of the people in this region, but also relates to the prosperity of countless generations of posterity.

Vigorous Planting of Trees and Grass to Control Erosion

Both the CCP Central Committee and the Sate Council have always been extraordinarily concerned about bringing the loess plateau under control. Some achievements have been made during the past 30 years or more in bringing the loess plateau under control, and a certain amount of experience has been accumulated. However, the task of fundamentally transforming the loess plateau landscape and controlling erosion is still a formidable one.

During the past 30 years, three different attitudes and methods have existed as to how to bring under control the loess plateau. These have been manifested in three different results.

First was a lack of confidence in being able to bring the loess plateau under control, a feeling that nothing could be done to bring it under control, and adoption of an attitude of letting everything slide. Governed by this mentality, people were at the mercy of nature and continued to clear hillsides to farm. As a result, erosion became increasingly worse and the people's livelihood became increasingly hard.

Second was a recognition that the loess plateau ought to be brought under control. A great deal of money has been spent since the founding of the People's Republic in this regard, and quite a few problems have been built. These have achieved a certain amount, but in terms of large areas, erosion has not been controlled by any means, and some of these projects were even a waste of money and manpower.

Third was sufficient confidence and correct methods in bringing under control the loess plateau. This method used comprehensive control, which meant biological measures, for the most part, augmented by engineering projects. During the past more than 30 years, in places that have adhered to this method, created forests and grew grass, erosion has been virtually brought under control, and a panorama of lush forests and bumper crops, and the flourishing of domestic animals has taken place.

The large amount of representative data presented in these conferences show that by planting forests and growing grass on the loess plateau, not only is it possible to conserve the water and the soil, protect water sources, regulate the climate, and improve the ecological environment, but also a major way to develop the economy of mountain regions and make the peasants of mountain regions become prosperous with all possible speed. In order to accomplish this, it is necessary to adhere to a program of construction of "using forests and livestock primarily in comprehensive development of agriculture, forestry, and livestock raising, change from widespread farming for meagre yields to little farming for high yields, to change the vicious cycle into a benign cycle. In the past, numerous impoverished mountain regions lopsidedly emphasized "taking grain as the key link, devoting efforts to grain year after year when they could not get grain, but now placing the emphasis of production on forestry and the livestock industry, and getting grain contrary to expectations. This principle merits our deep thought.

The Inspiration that Ji and Chunhua Counties Have Given

How can erosion be brought under control and the ecological environment improved on the loess plateau? Ji County in Shanxi Province and Chunhua County in Shaanxi Provicce have provided valuable experience in this regard.

Ji County is located on the loess plateau in western Shanxi on the southern end of the Luliang mountain range. The county has a total area of 17.77 million square kilometers. The land is traversed by ravines, and ridges of hills undulate across it. The county annals record that during the last years of the Ming dynasty, Ji County had tens of li of lush forests," "pine and cypress grew in forests, and the trees towered toward the sky." During the regin of Shunzhi in the Qing dynasty, forest fires constantly occurred, and following the advent of the Chinese Republic destruction of the forests and the clearing of land increased to a serious degree. Following Liberation, the habit of the masses of steady clearing of land continued unabated for a long time, turning remnant forests into bald mountains. Following the Third Plenary Session of the 11th Party Central Committee, the County CCP emancipated mentalities, eradicated "leftist" influence, and adapted general methods to local situations to establish a policy of "use of forests and livestock primarily for all around development of agriculture, forestry, and animal husbandry" to build output. Following a survey of natural resources and readjustment of the structure of agriculture, a land use plan of "five parts forests, three parts grasslands, and two parts divided for fields" was enacted; and a system of responsible for forestry production was promptly established and perfected bringing about a great development of forestry production throughout the county and a 26 percent forest cover rate.

Chunhua County is located in the northern part of Xianyang Prefecture in Shaanxi Province and north of the Wei River on the southern edge of the loess plateau. In 1949 the entire county had only 17,000 mu of natural second growth forests. Beginning in 1973, they devoted attention to the planting of trees to create forests as a basic measure for the transformation of the loess plateau, aroused the masses, and for 7 consecutive years launched large scale tree planting and afforestation campaigns. By the end of 1980 the afforested preserve area amounted to 251,000 mu. Along a highway embankment, farmland shelter forests run for a total distance of 1,600 kilometers; trees planted in the four besides [beside houses, villages, roads, and water] number 7.57 million, and the forest cover rate has increased from the

former 3.5 percent to the present 18.8 percent. In addition, a combination of biological and engineering measures have been used to control an erosion area of 257 square miles, which is 27 percent of the total erosion area.

In the course of the conferences, people saw with their own eyes the vast tracts of man-made forests planted in recent years in Ji and Chunhua counties. The fragmented and broken ravines have become covered with lush green trees. The erosion situation handed down by history has begun to be brought under control here. The idea of "soil not going down the mountains and water not going through the ravines is in process of gradually becoming a reality. The realities of these two counties have enlarged people's vision, and they realize that there is hope that the loess plateau can be brought under control.

New Circumstances and New Problems

As the system of responsibility for agricultural production is established and perfected, problems in establishment of a system of responsibility in forestry have been placed on the agenda A look at the problems reflected in these two conferences shows that in numerous places serious situations of wanton cutting, reckless denudation and destruction of forests to clear land for farming have taken place because systems of responsibility for forestry were not given prompt attention. This is a new situation and a new problem to be faced in the building of the forestry industry.

Establishing and perfecting a system of responsibility for forestry production has become a priority matter in building the forestry industry. In the process of building a system of responsibility, what are the new problems requiring study and solution?

One is the problem of caring for existing forest trees. Most of the existing mountain forest tracts and principal forest belts have been collectively built and are administered by communes and brigades. After the way of administering agricultural production was changed, and particularly in places that instituted the "double contracts" [contracting with individual households for production or for work], the phenomenon appeared of "contracting for output in agriculture but no one being in charge of forestry." Many commune and brigade forest farms tended toward a state of disintegration. This problem requires urgent study and solution. At the present time, some forest farms have no income as yet, or else income is miniscule; however, in long range terms, these forest farms are a great wealth. If they are botched, the longterm welfare of commune members will be damaged. In regard to this problem, some places have used the method of using agriculture to nurture forestry, and using sideline occupations to nurture forestry, by which is meant withdrawl of a certain amount of expenses from total income from agricultural byproducts for compensation to personnel specializing in forestry. In so doing, distributions of earnings to commune members for any given year will naturally be reduced to a greater or lesser extent, but once the forestry industry begins to earn, it will become something on which commune members may rely to become prosperous. This requires indoctrinating the broad masses of commune members in the relationship between immediate benefits and longterm benefits in order to preserve existing collective forest farms. Small tracts of scattered trees may also be contracted out for care, using a system of division of increase in value, or proportional division of earnings. No matter the method adopted, it is important that discussions be held

with the masses and the will of the masses be respected so that existing forest trees will be really taken care of.

Second is the problem of administration and management of newly built forests. For this there are currently several different forms of solution. The first is unified planning and household by household participation in afforestation, rights to the forests reverting to production teams, and earnings divided up, or else supplemental wages paid. The second is sharing of responsibility for afforestation among the workforce, the collective recording workpoints and paying compensation with rights to forests reverting to the collective. The third is contracting afforestation of barren hills and slopes to specialized households or to a combination of households, combining afforestation and management with a proportional division of earnings, the largest proportion going to commune members. Fourth is unified planning but designation of some barren hills and slopes for afforestation by individual commune member households, ownership going to whomever does the afforestation. No matter the form adopted, there has to be unified planning, unified leadership, and stirring of the masses at a unified time in a concentration of forces to complete afforestation quotas for any given year. Control of the loess plateau is a great and formidable task. Without realistic and unified planning, and without very good organization of forces in all quarters, piecemeal efforts will fail.

Establishment of a system of responsibility for production means the emancipation of production forces, not only the emancipation of agriculture, but the emancipation of forestry and other industries. Attention to the key link that a system of responsibility for forestry is, and linking the development of forestry production to the personal welfare of commune members can arouse commune members to the maximum extent to plant trees and create forests, and can bring about the best situation in the development of forestry since the founding of the People's Republic.

Silting of Hydropower Dam

Beijing GUANGMING RIBAO in Chinese 23 Oct 81 p1

[Article by Li Wei [2621 5588]

[Text] Editorial Department

Recently this correspondent visited the Longyang Gorge Electric Power Station construction site. The Longyang Gorge Electric Power Station is China's second largest hydroelectric power station, only the Gezhou Dam being larger, and it is also the first hydroelectric power station on the upper reaches of the Yellow River. Flood waters and silt are the two great dangers for this power station. Following their survey in August and September of this year of the Koko Nor region, Wang Limo [3769 4539 2307] and [0702 4423 3123], engineers in the agricultural zoning office of the "Three Norths" forest shelter area have recently made the following proposals. After winning victory over this year's massive flood, beginning of work to build a shelter forest belt in Baili Prefecture on both shores of the Yellow River up above the power station so as to further protect the Longyang Gorge Electric Power Station, and to extend its productive life following construction.

On the basis of on the ground observations, they recommended: In the Chakayanchi region in the eastern Tsaidam Basin, every year there is a large amount of sandy

soil, which moves from the northwest to the southesst over a distance of 400 li carried along on damaging winds from the Shazhuyu river valley at the foot of the mountain along Koko Nor, and between Aniwayan Mountain and Longyang Gorge, a distance of 100 li along the north bank of the Yellow River, it is drawn into the river. At present, sand dunes exist in clusters on both banks of the Yellow River. Not only are 1 million mu of grasslands in the two counties of Gonghe and Guinan along the banks of the river desertified, but an extremely large amount of soil has increased the silt content of the river water, and has gradually silted up reservoirs. This must be promptly brought under control. They recommended widespread planting of shrubs in the sandy area, and the building of many shelter forest belts in the four hundred li sandy blit, first of all along both shores of the Yellow River. They recommended the building of a 100 li long shelter forest tract from Aniwayan Mountain to the Longyang Gorge to intercept the sandy soil, to moderate sand damage, and to protect the reservoirs.

The two engineers noted that in Hainan region [of Chinghai] the main reason for the increasingly serious desertification is, in addition to the blind clearing of land for agriculture in the 1950's, overgrazing that destroys ground cover and promotes degeneration of the grasslands and desertification. Consequently it is necessary to determine in a rational way the amount of grasslands to be prohibited to pasturage for diligent protection of the grasslands. It is also necessary to actively find ways to solve the fuel problems for peasants and herders and to prohibit the digging up of plants that grow in the sand, as well as to prohibit clearing of land for agriculture. The problems of desertification of the Hainan region's grasslands is fairly conspicious in Chinghai Province. Control of this sandy tract and restoration of the ecological balance will not only benefit the reservoirs, but will also be of major significance for agricultural and livestock industry production. The shelter forest belt that the Shazhuyu Commune in the sandy belt has already built can protect 12,000 mu of farmland. It has had very good results and merits promotion.

Ningxia Afforestation Efforts

Beijing GUANGMING RIBAO in Chinese 23 Oct 81 p 1

[Article by Wang Guanghua [3769 1684 5478]

[Text] People's procuratorial organizations at all levels of the Ningxia-Hui Autonomous Region have promptly investigated and tried, in accordance with pertinent laws for the protection of forests, all cases involving the denudation or poaching of forests, punishing principal offenders, and indoctrinating the broad masses to put a stop to the evil tendency of destroying forests.

During the first half of this year, procuratorates at all levels in the autonomous region have heard more than 110 cases involving destruction of forests. This is more than three times the number of such cases heard last year. Nigxia Province is one of the provinces of China that has a paucity of forests, the forest cover rate being only 2.79 percent. Since last year, the autonomous region, municipal, and county people's procuratorates have earnestly intensified forest inspection work. First of all they organized the entire forest of inspection cadre and police for conscientious study of pertinent forestry policies and ordanances, as well as how representative cases were handled. Among cadres and the masses, they launched

widespread propaganda and indoctrination in protection of the forests. With the support of the County CCP Committee and the County People's Government, the County Procuratorate of Jingyuan County in the Liupan mountain region acted in coordination with departments concerned to organize work teams to go into communes and brigades both to check out and verify cases of destruction of forests, and to engage in propaganda work. They investigated and handled, in accordance with law, eight instances of serious destruction of forests. They also helped the grassroots level formulate pledges to protect forests, and to establish systems of care and protection with very good results.

In cases of destruction of forests for which there was not sufficient evidence for investigation and prosecution, they actively worked together with forestry, and other units concerned to settle them, shirking nothing but making every effort to reduce or halt the destruction of forest resources. In order to do a good job of routine forest investigation work, acting in accordance with pertinent regulations, they established, in forest areas and in counties where forest inspection duties were fairly heavy, on-the-job forestry inspection personnel, and they hired a group of forestry inspectors and messengers to supervise implementation of the "Forest Law" and other pertinent ordinances and policies, and to report to the authorities or bring to light cases of denudation and poaching of forests for a good job of protecting the forests.

9432
CSO: 4007/59

BRIEFS

ANHUI PREFECTURE AGRICULTURAL OUTPUT--This year Chuxian prefecture, Anhui Province, reported a total grain output of 3.7 billion jin, 15 percent over the 1980 figures; an output of 260 million jin of oil bearing crops, 77 percent over 1980; a 62 percent increase in cotton output; and a 460 percent increase in output of cured tobacco. The per capital contribution of commercial grain throughout the prefecture was 171 jin in 1979, 202 jin in 1980 and an estimated 300 odd jin in 1981. The per capita distribution income from the collective was 82 yuan in 1979, the year when the production responsibility system was put into effect, 202 huan in 1980 and an estimated 300 odd yuan in 1981. [OW161207 Beijing XINHUA Domestic Service in Chinese 1254 GMT 10 Nov 81]

CSO: 4007/81

BRIEFS

SOYBEAN PRODUCTION--Suihua County, Heilongjiang Province, reaped a bumper soybean harvest this year on its 465,000 mu of soybean fields. Per-mu yield is expected to be 250 jin, 20 percent higher than the 1980 level, and output is expected to be 110 million jin, a record. The county is expected to sell 75 million jin of soybeans to the state, more than 4 times the 1980 figure. Each peasant will have his income increased by 51 yuan from soybean production. [SK301117 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 29 Oct 81]

CSO: 4007/81

BRIEFS

PREFECTURE AGRICULTURAL HARVEST--Huaiyin Prefecture in Jiangsu has reaped an all-round bumper harvest of agricultural crops this year. The total output of grain has reached 7.5 billion jin, topping last year's by some 800 million jin. [OW141451 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 10 Nov 81]

CSO: 4007/81

JIANGXI HOLDS EMERGENCY MEETING ON AUTUMN HARVEST

OW061413 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 5 Nov 81

[Text] On the morning of 5 November, the Jiangxi Provincial People's Government held an emergency meeting, attended by responsible comrades of all departments, to study the question of autumn harvesting. The meeting called on rural cadres and masses throughout the province to mobilize on an emergency basis to successfully combat wet weather and reap a bumper agricultural harvest this year.

Now is the time for autumn harvesting and winter planting. However, affected by the winds from the southern mountain range, the whole province is facing one of the longest unbroken spells of wet weather on record. As a result, our autumn harvesting and winter planting are unfavorably affected.

According to the weather forecast, we will still have overcast weather and rain throughout the province for the next 3 to 5 days. The meteorological station, after analyzing meteorological data accumulated in past years, says that wet weather will prevail in the first 20 days of November.

To successfully combat wet weather and guarantee a bumper agricultural harvest, the meeting stressed that the following work must be done in all localities without fail:

1. Leading cadres at all levels must go to grassroots units to study with cadres and the masses, concrete solutions, to overcome wet weather. It is necessary to resolutely prevent and overcome the negative mood of letting things drift.

2. It is necessary to dig trenches to drain water and see to it that, on rainy days, no water accumulates in the fields and that, when the rain stops, the fields become dry. It is necessary to prevent the late rice seedlings from rotting. It is necessary to keep winter crops from rotting.

3. It is necessary to race against time on sunny days and concentrate the labor force on harvesting autumn crops. While harvesting crops, we must bring into full play the initiative of both the collective and the commune members. It is necessary to organize commune members to coordinate and help each other. It is necessary to advocate threshing in the fields and make every effort to avoid piling crops in the open air.

4. It is necessary to make full use of vacant houses or use agricultural sheeting and straw to build makeshift shacks so that wet crops can be kept dry. It

is necessary to work hard to protect crops from heat, sprouting and rotting. It is also necessary to select and keep fine seeds of late rice.

5. All departments must be of one heart and one mind and spare no efforts to help people in rural areas with autumn harvesting and winter planting, thus making contributions to reaping an overall bumper agricultural harvest this year.

CSO: 4007/81

BRIEFS

SOYBEAN PRODUCTION--Yushu County in Jilin Province has collectively planted 827,000 mu of soybeans. Many peasants have also planted soybeans on their private plots. Soybean output from the collective soybean fields is expected to be 126.8 million jin and that from private plots is expected to be 30 million jin [Changchun Jilin Provincial Service in Mandarin 2200 GMT 26 Oct 81 SK]

AUTUMN HARVEST--Jilin Province has scored marked achievements in its autumn harvest. As of 5 October, the province had harvested 34.14 million mu of various crops --65 percent of all crops to be harvested. [SK070704 Changchun Jilin Provincial Service in Mandarin 1100 GMT 6 Oct 81]

AGRICULTURAL TECHNOLOGY--Since the beginning of 1980, Jilin Province has sponsored 6,700 training classes on agricultural scientific technology, and some 300,000 persons have been trained. As a result, the acreage sown with fine seeds has expanded to 17 million mu, an increase of 83.6 percent over 1978. Meanwhile, 1,784 agricultural and breeding stations employing 3,122 scientists and technicians have been restored and established. [SK070704 Changchun Jilin Provincial Service in Mandarin 2200 GMT 6 Oct 81]

TRACTOR PURCHASE--From January to August 1981, rural areas of Jilin Province bought 3,742 tractors, an increase of 9.8 percent over the corresponding 1980 period. In Yushu County alone, peasants bought 343 tractors last spring and 220 tractors in the autumn. [SK290930 Changchun Jilin Provincial Service in Mandarin 2200 GMT 26 Oct 81]

CSO: 4007/81

BRIEFS

GRAIN PRODUCTION--In Liaoning Province, Tieling Prefecture has reaped bumper harvests for 4 consecutive years. This year the prefecture's marketable grain to be turned over to the state is expected to exceed 1930's record level of 1.93 billion jin. The prefecture will not slacken its efforts to prepare for next year's farming after bumper harvest. By 25 October, the prefecture had plowed 2 million mu of farmland, 37 percent of the acreage to be plowed, afforested 55,000 mu and completed 1 million cubic meters of earth and stone work for farmland improvement projecst. [Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 29 Oct 81 SK]

CSO: 4007/81

LIMITATIONS ON LAND USE ON NORTHWESTERN SHANDONG PLAIN EXPLAINED

Dalian ZIRAN ZIYUAN [NATURAL RESOURCES] in Chinese No 3, Sep 81 pp 42-51

[Article by Guo Huancheng [6753 3562 2052] and Xu Zhikang [1776 1807 1660], Geography Institute, Chinese Academy of Sciences: "Problems in the Rational Use of Land Resources on the Northwestern Shandong Plain"*]

[Text] The Northwestern Shandong Plain is located in the lower reaches of the Yellow River and encompasses a total of 33 counties and cities in Liaocheng, Dezhou, and Huimin prefectures. The land area totals 37,835 square kilometers, or 24.7 percent of the total land area of Shandong Province. Here the plain is vast and land resources abundant, making it the major grain and cotton growing region of Shandong Province. However, as a result of the serious damage done by drought, flooding, and alkalinity, agricultural production here has long remained in a state of low and inconsistent yields, and it is one of the low yield areas in both the province and in the country. In order to study the problems of rational utilization of land resources in the Huang-Huai-Hai plain, a survey of the region was undertaken in 1979, which preliminarily charted the soil resources situation, utilization characteristics, and existing problems, and which also put forward suggestions for rational use of land resources.

I. Analysis of Conditions Affecting Use of Land Resources

1. The land is generally flat, but hills, slopes, and depressions intersect it.

The Northwestern Shandong Plain is an alluvial plain of the Yellow River. The land area is vast; the terrain is low and flat, and the soil layer thick. It is part of the Huang-Huai-Hai Plain. The topography tilts from the southwest toward the northeast, and elevation above sea level ranges from about 40 meters to 10 meters. The fall of the land surface is 1/7,000 to 1/10,000, and the relative difference in height of the land surface is 1 to 5 meters. Because the Yellow River has changed its course, burst its banks, and silted up numerous times throughout history, numerous hillocks, slopes, and depressions with a height difference of no more than 3-5 meters have formed (see Table 1). Generally speaking the high hillocks are concentrated to the west of the Majia River and

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Table 1. Table Showing Make-Up of Landforms on Northwestern Shandong Plain

Types of Landforms	Total Cultivated Land	Hilly Land	Elevated Siltland Along River	Gentle Slopes	Depressions
Area (10,000 mu)	2,983.47	616.68	166.99	1,546.8	653
Percentage of Cultivated land	100	20.7	5.6	51.8	21.9

in the area of the old river course where the terrain is 3 to 4 meters higher than its two sides, and 10 to 30 kilometers wide, this area accounting for about 20.7 percent of the cultivated land. The land is elevated and the soil loose, composed mostly of sandy loam, which is easily drained and pervious to water. Underground water is stored fairly deeply; water quality is fairly good; and there is no threat of waterlogging or salinity. Well irrigation is well developed and population is numerous relative to cultivated land. This is where the cream of agricultural production for the entire area is located. The elevated silt lands along the river are, for the most part, in the area along the two sides of the former watercourse of the Yellow River where they form a swath that amounts to about 5.6 percent of the cultivated land. This soil is largely loam; underground water is about 3 meters below the soil surface; the soil is infertile, not endangered by waterlogging or alkalinity, and is seriously parched. The gradually sloping land lies between the old watercourse and the present channel of the river. It is a broad, large area, amounting to about 51.8 percent of the total cultivated land, and is composed mostly of loam. The top of the slopes is made up of light loam soil, and has generally not been hurt by waterlogging or alkalinity. The bottom of the slopes are made up of medium loam and heavy loam, and have been damaged by alkalinity and salinity. Aside from the trough shaped depression along the river, most of the depressions are located in the relatively low-lying areas that intersperse the high land, forming an area of about 21.9 percent of total cultivated land in the region. The lay of this land is low; draining of water from it is difficult; and water readily collects in it making the soil sticky and heavy. Damage from waterlogging and alkalinity is fairly severe. This is the major area of low yields. Changes in the hilly, slope, and depression topography of the Northwestern Shandong Plain directly affects the distribution of soil and water conditions in the space, differences in the drought-stricken, waterlogged, and alkaline areas and the degree to which these areas are damaged. The masses say, "The hills are dry; the depressions waterlogged; and the slopes alkaline." This aptly explains the relationship between the topography and dryness, waterlogging, and alkalinity (see Table 2).

Table 2. Relationship Between Micro Landforms and Drought, Waterlogging, and Alkalinity

Types of Land-forms	Drainage Conditions	Salt Content (%)	Underground Water		Degree of Alkalinity, Salinity	Drought, Waterlogging & Alkalinity Damage
			Depth (Meters)	Degree of Mineralization (Grams/liter)		
Hilly land	Good	< 0.1	> 3.0	0.5 - 2.0	None	Drought
Gradual slopes	Not easy	0.1-0.2	2.0-3.0	2.0 - 5.0	Light	Drought, waterlogging and alkalinity
Depressions	Difficult	0.2-more than 2.0	0.5-2.0	5.0-15.0	Fairly heavy	Waterlogging, alkalinity

2. Fairly Abundant Amount of Heat; But Fairly Frequent Drought and Waterlogging Damage

This region has a temperate monsoon climate in which the amount of heat is fairly abundant. Accumulated temperatures are fairly high (≥ 10°C accumulated temperatures of 4,000 - 4,500°C), and a frost-free period that is fairly long (210 days), making it suitable for the growing of cotton, which likes warmth, and also making it capable of satisfying the needs of wheat, and autumn crops in a two crop per year system. However, the rainy season varies greatly, and quantity of evaporation is greater than quantity of precipitation. Annual precipitation averages 600 millimeters, 60 to 70 percent of it being concentrated during the summer (the 3 months of June, July and August). In other seasons, precipitation is scant, and they are dry. During springtime, in particular, the quantity of precipitation amounts to only 12 percent of the amount for the entire year, and amount of evaporation is 8 to 10 fold greater than amount of precipitation. "Spring drought, summer waterlogging, and autumn drought again," are major characteristics of the climate of this region. Spring is the crucial growing season for wheat when jointing, heading, flowering, and coming into milk occurs; the lack of water very greatly impairs its growth and output. In summer, precipitation is concentrated and of great force; however, because of the undulating microtopography, water does not drain away easily, creating waterlogging, which impairs the growth and output of late autumn crops (such as corn and millet), and cotton. Late autumn drought primarily affects the sowing of wheat on time.

3. Soil Is Thick, But There Are Striking Differences in Distribution From Place to Place

The mother material for the soil in this region is deposits from the overflowing of the Yellow River. It may be divided into sandy, loam, and clay in terms of its properties. The sandy soil accounts for 10 percent; the loam for 65 percent, and the clay for 25 percent (see Table 3). Because of the separating that the

Table 3. Soil Texture Area Structure of Northwest Shandong Plain

Type Texture	Total Cultivated Land	Loan and Arenaceous Soil	Clay Soil	Sandy Soil
Area (10,000 mu)	2983.47	1935.75	740.02	262.7
Percentage of cultivated land	100	65.0	25.0	10.0

Yellow River and its tributaries does, distribution of sediment follows clear laws as well. The masses say, "When the current is fast, it is sand; and when slow, it is silt," and "sand in the hillocks, but clay in the depressions." In general, the sandy soil is distributed on both sides of the old course of the Yellow River and in channels where the Yellow River has overflowed or broken its banks. The sandy soil is light, and individual grains are coarse making it friable. But since it lacks structure, it has poor water and fertilizer retention properties. It does not stand up against drought, is low in fertility, and generally has an organic content of 0.18 to 0.24 percent. Consequently, during the late stage of crop growth, it frequently runs out of fertility and yields decline. The masses called it "business land," because they can't get anything out of it unless they make an expenditure. The area of loam soil is large and distribution widespread. This includes sandy soil, light loam, medium loam, and heavy loam soils, most of which are distributed on the near gradient level between streams and sluggish rivers. The structure of the soil is spongy, and friability good, making it suitable for sustained cultivation. The nutrients in the soil are not numerous, however, organic content being 0.6 to 0.8 percent. The clayey soil is distributed in the depressions in the terrain, where streams flow sluggishly, and where extensive damage has been done by waterlogging. The soil layer is tightly compacted and has poor porosity. Water, fertility, air, and heat in the soil are extremely imbalanced. The soil is both easily waterlogged and easily parched, and its fertility is low. The organic content runs around 0.5 percent. However, in this area, the soil contains soluble salts in an amount of about 0.1 percent. Under conditions of intense evaporation, the salts readily percolate to the top of the soil surface with water, accumulating there to form salinity and alkalinity. Surveys show an area of about 9,544,800 mu of saline-alkaline soil, amounting to 32 percent of the total cultivated area. About 75 percent of the saline-alkaline land is inland, and about 25 percent of it is along the seacoast. Inland alkaline-saline lands are concentrated along the edges of depressions and at the bottom of slopes, where the underground water table is high, water quality poor, movement of salt in solution intense, and capillarity strong, causing salt accumulations on the soil surface and poor crop growth. On the basis of quantity of salt content and rate of keeping a full stand of seedlings growing, this soil is classified as light, medium, or heavily alkaline (see Table 4). The soil of light salinity and alkalinity is located at some distance from the sea, and is entirely used for the growing of crops. Salt content of this soil is 0.2 - 0.4 percent, and the rate of keeping a full stand of crops growing in it is better than 70 percent. Corn grows in it with difficulty, but growth of sesbania, cotton, and sunflowers is normal. Moderately alkaline-saline soils are fairly close to the sea, and have

a salt content of 0.5 to 0.7 percent, and a rate of keeping a full stand of crops of between 50 and 70 percent. Crops do not grow well in it, and it cannot be used unless it is improved through lowering the salt content. The heavily alkaline-saline soils near the seacoast have a salt content of 1 percent or more, and a rate of keeping a full stand of crops of less than 30 percent. They are not suitable for the growing of crops.

Table 4. Composition and Distribution of Saline-Alkaline Land on the Northwestern Shandong Plain*

Item \ Prefecture	Total for All Prefectures	Liaocheng Prefecture	Dezhou Prefecture	Huimin Prefecture
Total cultivated area (10,000 mu)	2983.47	870.10	1102.80	1010.57
Alkaline-Saline Land				
Total area (10,000 mu)	954.48	145.00	288.35	521.13
Cultivated land as a percentage of total area	32.0	17.0	26.0	52.0
Within the Saline-Alkaline Area				
Light--Area (10,000 mu)	386.70	72.50	123.40	190.80
Saline-alkaline land as a percentage of total area	41.0	50.0	43.0	37.0
Medium--Area (10,000 mu)	317.11	40.84	80.58	195.69
Saline-alkaline land as a percentage of total area	33.0	28.0	28.0	38.0
Heavy--Area (10,000 mu)	250.67	31.66	84.37	134.64
Saline-alkaline land as a percentage of total area	26.0	22.0	29.0	26.0

*The prefecture water conservancy bureaus provided (in 1978) most of the data on the table for the saline-alkaline areas.

4. Water Resources Are Good, But Their Distribution Is Unbalanced

Survey shows that surface water in the region accounts for about 59.3 percent of total volume of water, and underground water accounts for 40 percent. Most of the surface water is in the Yellow River, which in most years averages a flow of 46.8 billion cubic meters.[1] Even in dry years, it carries 27.6 billion cubic meters of water. In most years, its volume of water in times other than flood stage averages 23.9 billion cubic meters. The salt content of the water is 0.2 to 0.5 percent, making it suitable for use in irrigation. However, the Yellow River has a high silt content, transporting an average of 1.2 billion tons of silt annually.

1. Taken from "Shandong Agricultural Geography," compiled by Geography Department, Shandong Provincial Teacher's College, 1977-1978.

Each cubic meter of water contains 25.55 kilograms of silt. Because it contains so much silt, accumulation of silt in waterways is serious. The entire region has a dynamic storage capacity [0520 0328 6852] of 4.1 billion cubic meters, wells on which serve an area of 17,401,600 mu, or 58.2 percent of the cultivated land. In its area distribution, water is fairly plentiful on both shores of the Tuhai River and the Yellow River, and to the south of the Xiaoqing River, and water quality is very good, mineralization being 1 gram per liter, making it suitable for irrigation. In the broad area between the old course of the Yellow River and the river itself, the hydrology is complex; the quantity of water contained and its distribution are inconsistent; the abundance of water is poor; and mineralization is 2 to 5 grams per liter, making it unsuitable for agricultural irrigation. Because of the effects of the alternating sea and land, and mineralization (> 5 grams per liter), the region along the seacoast is not suitable for irrigation (Figure 1).

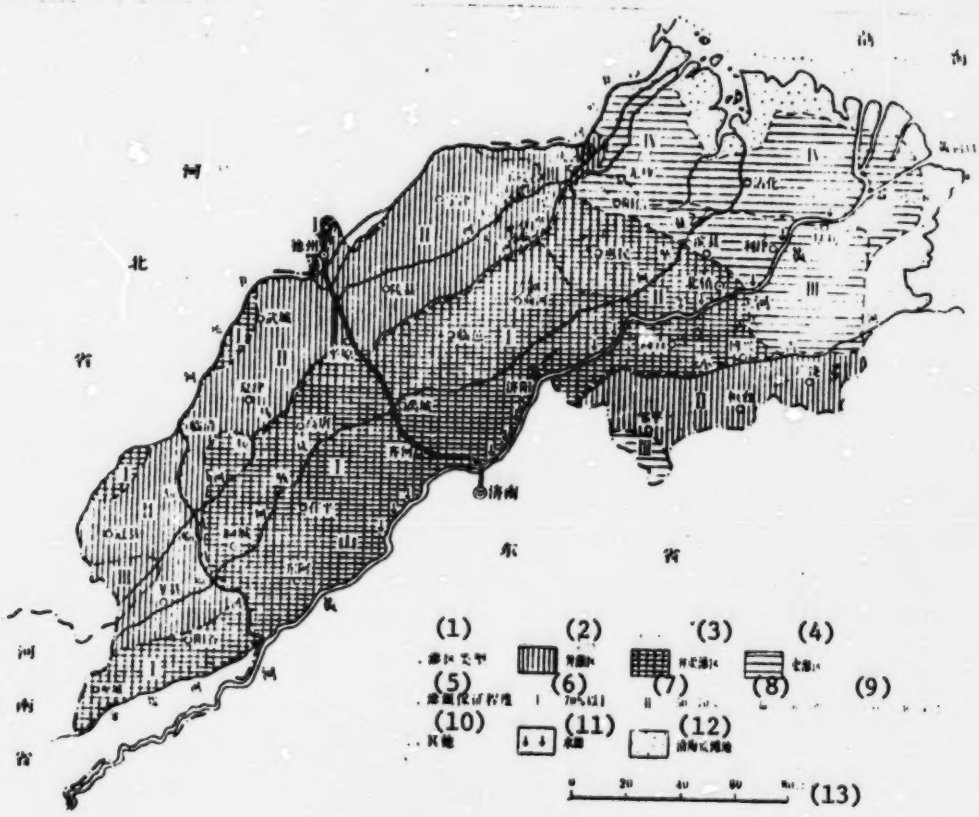

Figure 1. Map Showing Agricultural Later Conservancy Conditions on the Northwestern Shandong Plain

Key: (1) Type irrigation system
(2) Well irrigation system
(3) Well and ditch irrigation system
(4) Ditch irrigation system
(5) Extent of assured irrigation
(6) More than 70 percent
(7) 50-70 percent
(8) 30-50 percent
(9) Less than 30 percent
(10) Other
(11) Wetlands
(12) Barren beaches along seacoast
(13) Kilometers

Major Current Problems Existing in This Area's Water Resources: First is seasonal imbalance with much rainfall in summer and a large volume of flow in rivers, and little rainfall in spring (March-May) with a little flow. For example, between 31 May 1975 and 27 June 1975, the Yellow River stopped flowing twice for a total of 19 days, impairing water use for agriculture. Second is regional imbalance with the south getting more rainfall as a general rule, and the north getting less; inland areas getting more, and seacoastal areas getting less. Survey shows Huimin Prefecture lacking water most, getting about half of total needs. Dezhou Prefecture lacks about one-seventh of its water needs; and Liaocheng Prefecture's water and soil resources are close to balance. The imbalance in distribution of water resources posed objective requirements for transferring water within the region and for diverting water from outside the region. Third is imbalance in use. An analysis of general survey data from the Shandong Provincial Water Conservancy Bureau for 1973 shows a 72.5 percent rate of utilization of water from wells for irrigation, the medium size irrigation area being 32.5 percent, and the large size ditch irrigation area being only 23.0 percent. In the well irrigation area, in particular, because of the overdensity of pump wells and the excessive pumping of water, underground reserves are inadequate, causing the formation of "funnels" in some places, impairing use of water for agriculture.

Comprehensive analysis of the natural condition of soil resources in this region shows a flat terrain, varied types, a deep layer of soil, moderate climate, and fairly good water resources favoring full use of soil resources and further development of agriculture, forestry, and livestock raising. On the other hand, the irregular topography and clear differences in macrolandforms, directly impair collection and drainage of surface water. Changes in soil character and underground water, plus the "spring drought, summer waterlogging, and more drought in late fall," intensify damage to this area from drought, waterlogging, and alkalinization, thereby impairing full use of soil resources, with the result that agricultural production has long been low and inconsistent.

II. Utilization Characteristics and Existing Problems for Soil Resources

Soil resources are fairly plentiful on the Northwestern Shandong Plain, and the utilization rate is fairly high. Results of this survey of land utilization rate shows the current structure of land utilization on the Northwestern Shandong Plain to be as follows: Cultivated land is 52.57 percent of total land area; forestlands account for 5.0 percent; pasturelands account for 2.68 percent; water surfaces account for 8.56 percent; wasteland amounts to 11.16 percent; villages, hamlets, cities, and towns occupy 11.65 percent; transportation arteries take up 3.77 percent; plants and mines use 1.45 percent; and 3.16 percent is used for other purposes. (See Table 5 and Figure 2).

The table shows current land use to be characterized as follows:

1. Predominantly cultivated land with little land used for forests or pasturelands; structure of land utilization fairly unitary.

In 1978, the region had 29,834,700 mu of cultivated land, or more than half the total area. Forestlands and pasturelands were few, the two together accounting

Table 5. Present Structure of Land Use on the Northwestern Shandong Plain (1978)

Item — Types of Soil Use	Area (10,000 mu)	Percentage
Total land area	5675.25	100
Cultivated land		
Total	2983.47	52.57
Highland cotton and grain high yield areas	616.68	10.86
Gentle slope grain and cotton moderate yield areas	1546.80	27.26
Depression area of low grain yields	653.0	11.51
Highland and riverflats oil crop, grain, forestry and fruit areas	166.99	2.94
Forestland		
Total	283.75	5.0
Shelter forests	156.65	2.76
Economic forests	84.40	1.49
Brush and sparse woods	42.7	0.75
Pastureland	152.0	2.68
Water surfaces		
Total	485.76	8.56
Ponds	51.25	0.90
Waterways	426.61	7.52
Lakes	7.9	0.14
Villages, hamlets, cities and towns	661.04	11.65
Transportation arteries	214.08	3.77
Plant and Mining land		
Total	82.20	1.45
Oilfields	50.00	0.88
Saltworks	32.2	0.57
Wasteland		
Total	633.66	11.16
Sandy wastes	18.2	0.32
Low-lying alkaline wastes	123.06	2.17
Coastal wastelands	422.4	7.44
Beaches	70.0	1.23
Other	179.29	3.16

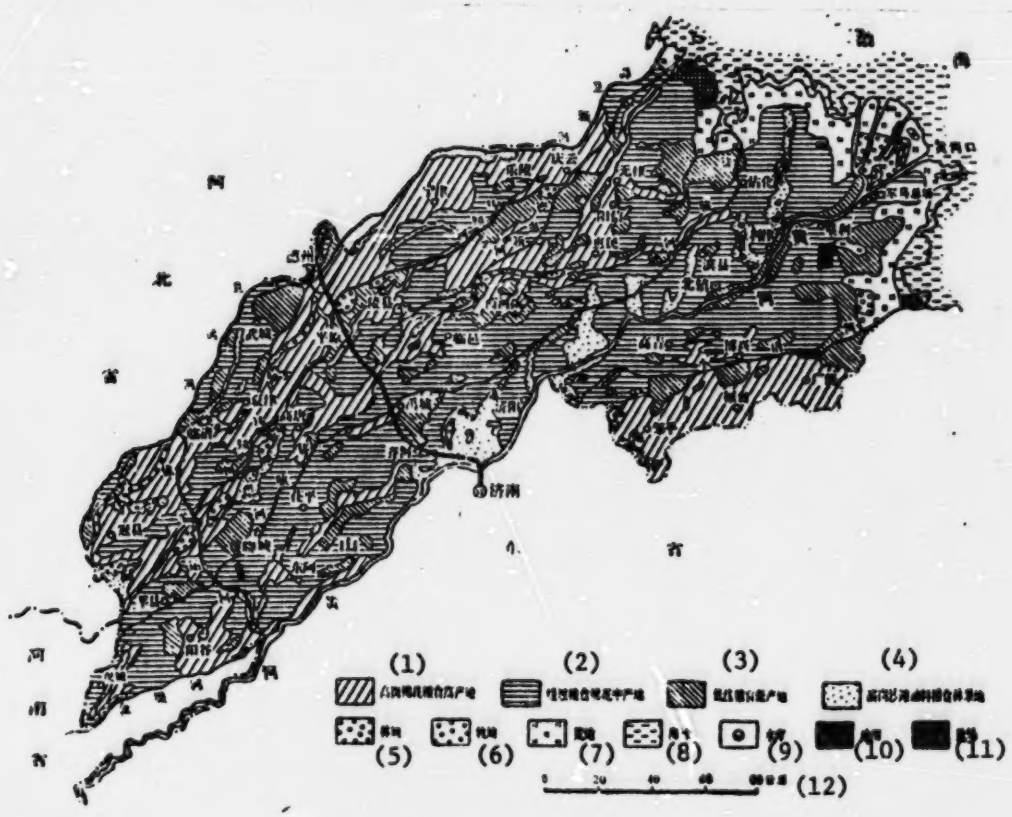

Figure 2. Map Showing Soil Use on Northwestern Shandong Plain

Key:

(1) High hill cotton and grain high yield land
(2) Gentle slope moderate yield grain and cotton land
(3) Low-lying low yield grain land
(4) High hill and shore land growing oil bearing crops, grain and forests
(5) Forestland
(6) Pastureland
(7) Wasteland
(8) Beaches
(9) Reservoir
(10) Oilfield
(11) Saltworks
(12) Kilometers

for less than 10 percent. This land utilization structure was also reflected in output value in which output value from cultivated crops amounted to between 70 and 80 percent of total output value from agriculture. Forestry amounted to between 3 and 4 percent; and the livestock industry accounted for between 7 and 11 percent. The soil utilization type is predominantly cultivated land. Distribution of cultivated land gradually tapers off from inland toward the seacoast. In Liaocheng Prefecture, 67.5 percent of the land is cultivated, but in Huimin Prefecture at the mouth of the Yellow River, cultivated land amounts to only

39.3 percent of the total. In Wudi, Zhanhua, and Kenli counties, only about 20 percent of the land is cultivated. The difference in the proportion of cultivated land in these cases both reflects the degree of reclamation and cultivation of wasteland, and also reflects the potential for further expansion of the cultivated land area. Conversely, forestlands and pasturelands increase the farther one moves toward the seacoast from inland. Land suitable for forestry and pasture is considerable, and forestry and livestock production is fairly good. Forests are distributed mostly in a triangle formed by the old channel of the Yellow River, the Dasha River, and the Yellow River. The area is not large; distribution is quite scattered; and the ground cover rate is low.

2. Multiple Crop Indices Fairly High With Grain and Cotton Predominating

Most of the cultivated land in this region is used to grow grain crops and cotton. The cultivated grain area amounts to 66.2 percent of the total cultivated area, and is from 70 to 80 percent in some places. Cotton fields occupy 15.7 percent of total cultivated land, and more than 30 percent in some places. Cottonfields and cotton output amount to 51.2 percent and 40.1 percent respectively of the province's total. This is Shandong Province's main cotton production base. In the distribution of grain, there is also a changing pattern from inland to the seacoast, and from the highlands to the slopes and to the depressions, with the grain growing area as a proportion of total cultivated land gradually increasing from 50 percent to about 80 percent, while the cotton growing area as a proportion of total cultivated land gradually declines from 25 percent to less than 10 percent, a small number of counties that are low-lying and seriously waterlogged (such as Wudi County) growing virtually no cotton at all (Table 6). With regard to crop distribution, in general, the uplands grew a lot of cotton, wheat, and corn, while the sandy soil grows peanuts and potatoes. Except for cotton, from which one crop a year is harvested, mostly wheat and corn are grown in two crops each year. On the slopes, mostly wheat, corn and millet are grown, while on high slopes cotton is grown in a two crops per year and three crops every 2 years system. In the depressions, wheat, soybeans and gaoliang are grown in a three crops every 2 years and 1 crop each year system.

This region's multiple cropping index increased rapidly, and to a fairly high proportion. Because production conditions were relatively poor during the period immediately following Liberation, the multiple cropping area was small, the multiple cropping index being about 120 percent, and mostly a system of one crop each year or three crops every 2 years was practiced. By the 1960's, as a result of emphasis given to the growing of high yield crops, the area devoted to wheat and corn rapidly expanded, and 80 percent of wheatlands became multiple cropped for a multiple cropping index increase to 150 percent, and a gradual change from three crops every 2 years to predominantly two crops every year. In the 1970's, inappropriate emphasis was given to "take grain as the key link," and there was continued increase in the multiple cropped grain area, the multiple cropping index climbing to from 150 to 170 percent. Because multiple cropping was too high, fertilizer inadequate, and the soil only used without being nourished, soil fertility dropped. At the same time, because of the excessive emphasis on diverse high yield crops, corn and potatoes squeezed out some drought-resistant and waterlogging-tolerant crops such as soybeans, gaoliang, millet, and food grains other than wheat or rice. A comparison of Liaocheng Prefecture in 1978 and 1949, for

Table 6. Relationship Between Cotton Distribution and Natural Conditions on the Northwestern Shandong Plain*

Type of land	Soil quality	Damage from drought	Grain-fields as a proportion of cultivated land	Per mu grain yields (jin per mu)	Cotton-fields as a percentage of cultivated land		Representative counties
River beaches, highlands and hills	Sandy loam	Drought	58.26	430	26.6	44	Linqing, Xianjin
	and Mixed soil		51.52	329	30.81	28	
Gentle slopes	Loam, and Slightly clayey soil	Drought, waterlogging, alkalinity	64.60	445	16.80	38	Shen Linyi
			62.57	425	21.30	20	
Low-lying land	Clayey soil	Waterlogging, alkalinity	72.82	380	10.95	16	Leling, Wudi
	and Alkaline soil		86.82	241	0.77	22	

*Statistical data in chart provided in 1978 by County Planning Department

example shows the wheat area as a proportion of total area sown to agricultural crops to have climbed from 20.2 percent to 43.2 percent, corn to have increased from 16.9 percent to 35.8 percent; and potatoes to have gone from 12.2 percent to 14.3 percent while soybeans, gaoliang, and millet went from 10.3, 12.9, and 16.5 percent respectively to 1.5, 1.4, and 3.2 percent. Thus, the proportion of crops consuming water and fertilizer increased, and crops that nurture the soil decreased. The land was allowed no rest, and use and nurture were out of balance, impairing guaranteed harvest of high yields. For the most part, cotton was grown over too dispersed an area. For most communes the growing area was less than 20,000 mu, and thus full use could not be made of favorable conditions for intensification of centralized management to increase cotton output.

3. Land production levels not high; numerous low yield fields, but great potential for increased yields

Despite the fairly good soil resources conditions in this region, levels of production remain low. In 1978, yields from grain cultivation were only 433.2 jin per mu, 18.7 percent lower than average yields per mu from grain cultivation in Shandong Province. Cotton yields were only 30.1 jin per mu, which was also lower than average yields for the province overall. Survey shows that fields in the region producing consistently high yields amounted to 28.4 percent of total cultivated land, while fields with moderate or fairly low yields accounted for 71.6 percent of total cultivated land. For a long time, the reasons for the low and inconsistent yields have been the four unfavorable elements of drought, waterlogging, alkalinity, and infertility. Development of water conservation endeavors since Liberation, which has greatly increased the irrigated area, has generally reduced the threat of drought. In the case of waterlogging, thanks to dredging of rivers and the digging of ditches, and major efforts on the draining of water, a remarkable increase has also occurred in water drainage capabilities. Alkalinity comes and goes as water comes and goes, and since the problem of drought and waterlogging have not been fundamentally solved, the problem of alkalinity remains. Furthermore, because irrigation is not done in a sensible way in some places,the trend toward increase in alkaline soil continues. However, in terms of increasing agricultural output, the inadequacy of fertilizer and the infertility of the soil makes for a universal problem. Results of a soil survey show that currently the organic content of most soil is from 0.6 to 0.9 percent, total nitrogen is 0.04-0.06 percent; rapid acting phosphate is 15-18 milligrams per kilogram; and quick acting potash is 117-130 milligrams per kilogram. This shows that except for potash, for which there is no shortage, other chemicals are inadequate. If the problem of nurturing the soil can be satisfactorily solved, agricultural output can increase remarkably, while at the same time helping improving the alkaline-saline soil.

4. Differences in soil use from area to area rather striking

The differences in land forms, soil, underground water and such natural conditions, and the extent of damage from drought, waterlogging, and alkalinity on the Northwestern Shandong Plain show up in the characteristics of agricultural, forest, and cattle raising output, and are strikingly different from distribution in other areas. On the basis of natural conditions, the structure of the agricultural sector, the crop structure, and output levels, the region may be divided into the following five types of agricultural soil in terms of use (Figure 3).

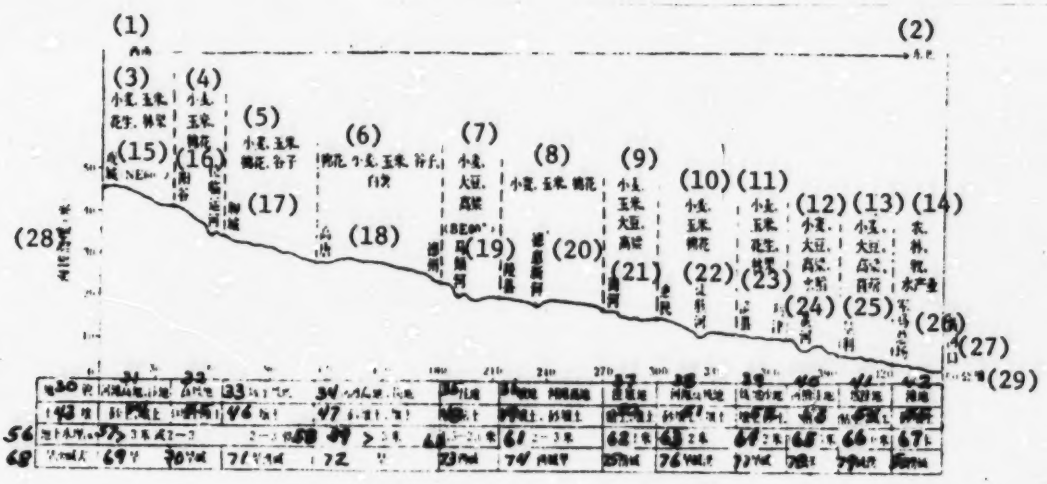

Figure 3. Cross Sectional Drawing Showing Types of Land Use on Northwestern Plain

Key:

(1) Southwest
(2) Northeast
(3) Wheat, corn, peanuts, woods
(4) Wheat, corn, cotton
(5) Wheat, corn, cotton, millet
(6) Cotton, wheat, corn, millet sweet potatoes
(7) Wheat, soybeans, gaoliang
(8) Wheat, corn, cotton
(9) Wheat, corn, soybeans, gaoliang
(10) Wheat, corn, cotton
(11) Wheat, corn, peanuts, woods
(12) Wheat, soybeans, gaoliang, rice
(13) Wheat, soybeans, gaoliang, alfalfa
(14) Farming, forestry, livestock raising, and aquatic products industry
(15) Guancheng (NE 60°)
(16) Yanggu, Weilin Canal
(17) Liaocheng
(18) Gaotang, Dezhou
(19) Majia River
(20) Ling County, Dehuixin River
(21) Shang River
(22) Huimin, Tuhai River
(23) Bin County, Lijin
(24) Yellow River
(25) Kenli
(26) Main military horse farm
(27) Mouth of Yellow River
(28) Elevation above sea level (meters)
(29) Kilometers
(30) Landforms
(31) River shore, high ground, sandy soil
(32) High slopes
(33) Gentle slopes
(34) Elevated land along rivers and hills
(35) Low-lying land
(36) Slopes and elevated land along rivers
(37) Low-lying slopes
(38) River shore and high slopes
(39) Gentle slope sandy soil
(40) Low-lying river troughs
(41) Low-lying slopes
(42) River shore
(43) Soil
(44) Sandy soil, loam
(45) Sandy loam, loam
(46) Loam
(47) Sandy loam, loam
(48) Clay
(49) Loam, Sandy loam
(50) Clay loam
(51) Sandy loam, loam
(52) Loam, sandy soil
(53) Clay
(54) Clay, alkaline soil
(55) Sandy loam

[key continued]

[continuation of key to Figure 3]

(56) Depth to underground water
(57) 3 meters or 2-3 meters
(58) 2-3 meters
(59) 3 meters
(60) 1.5-2.0 meters
(61) 2-3 meters
(62) <2 meters
(63) 2 meters
(64) 1-2 meters
(65) 1.0-1.5 meters
(66) 0.5-1.0 meters
(67) 0.5 meters
(68) Drought, waterlogging, or alkalinity damage
(69) Drought
(70) Drought and alkalinity
(71) Drought, waterlogging and alkalinity
(72) Drought
(73) Waterlogging and alkalinity
(74) Waterlogging, alkalinity and drought
(75) Waterlogging and alkalinity
(76) Drought, alkalinity and waterlogging
(77) Drought
(78) Waterlogging
(79) Alkalinity and waterlogging
(80) Waterlogging and alkalinity

(1) The area of cultivated land devoted to highland grain and cotton producing high yields amounts to 20.2 percent of the cultivated land in the entire region, most of it distributed to the west of the Majia River and to the region south of the Xiaoqing River. Here the terrain is fairly high, water drainage good, underground water sweet, conditions for irrigating from wells good, and soil fertility fairly high. Mostly cotton and grain crops are grown, cotton fields occupying more than 20 percent of the cultivated land, or as much as more than 30 percent in some places. Grainfields occupy about 50 to 60 percent of the land. Grain and cotton yields are 400-600 jin and 30-40 jin per mu respectively, putting them in the high yield category. Drought, waterlogging, salinity-alkalinity, and soil infertility are the major problems here in agricultural production.

(2) Moderate yield grain and cotton grown on sloping land accounts for 50.6 percent of the total of cultivated land in the region, most of it being distributed on both banks of the Yellow River and in the basin of the Tuhai River. Where the terrain is gently sloping, water drainage is somewhat difficult; underground water consists of both sweet and brackish; and a combination of irrigation using wells and ditches is used. Organic content of the soil is slow, and fertility is not high. It is suited mostly to the growing of grain crops, and cotton secondarily. Grainfields occupy between 60 and 70 percent of cultivated land. Cottonfields account for less than 20 percent. Grain and cotton yields are 300 to 500 jin and 20-30 jin per mu respectively, putting them in the moderate category. Drought, waterlogging, alkalinity-salinity, and soil infertility are the principal problems in agricultural production here.

Low grain yield low-lying land accounts for 21.4 percent of total cultivated land area. This type soil is widespread, the area between the Majia River and the Tuhai River and in seacoastal areas being fairly large. Drainage of water from low-lying terrain is difficult. Underground water lies just below the surface, and the area of waterlogged depressions and alkaline soil is large and

most devoted to the growing of wheat, soybeans, and gaoliang. Along both banks of the Yellow River, some low-lying areas also grow paddy rice, most of it being done in combination with a change of the soil's alkalinity. Here there is a large amount of land relative to population; farming is done in a crude way; damage from waterlogging and alkalinity is severe and output low, with grain yields being only somewhat more than 200 jin and no more than 300 jin per mu, being in the category of low farm yields.

(4) River flats sandy soil in which oil crops, grain, and forests grow account for 5.5 percent of the total cultivated land, and is mostly distributed in Guan County, and in Linyi and Lijin Counties in the old bed of the Yellow River. The area of sandy soil is large, its fertility poor, and wind erosion severe. Some places have shifting sands, which hurt nearby farmlands. Mostly grown is peanuts, potatoes, timber forests, and economic forests.

(5) Coastal beach livestock raising, forestry, and fisheries account for 2.3 percent of the total cultivated land area. Wastelands abound here, and the potential for development is great. A state agriculture, forestry, and livestock raising farm has been built here for the development of farming, forestry, and animal husbandry. Saltworks have been built along the coast, and both saltwater and freshwater shrimp are being raised.

III. Several Problems in Further Rational Use of Land Resources

In view of the natural characteristics of this region, full rational use of land resources entails principally the following several problems.

1. Problems in Adjusting General Methods to Local Situations for Planting.

Very great changes have taken place in the crops patterns of the northwestern region of Shandong since Liberation. These have been manifested in an increase in the grain crop area, a decrease in the economic crop area, an increase in high yield crop areas, and a decrease in the area of crops tolerant of waterlogging. This plus failure to take into full consideration the conditions characteristic of each locale, and emphasis on "arbitrary uniformity" have made for a crop pattern that is not only irrational, but one that has impaired crop outputs and numerous needs of the peoples' livelihood. Considering this region's characteristic conditions of "spring drought, summer waterlogging, and further drought in late autumn," as well as the "rather severe drought, waterlogging, and alkalinity," henceforth local areas should curtail their wheat and corn growing areas, and enlarge the growing of soybeans, gaoliang, and millet. In places where conditions permit, more cotton and peanuts should be planted in a readjustment of crop growing ratios. Though wheat would avoid the waterlogging period and is a crop that produces consistent yields, its growing area should not be too large so as to avoid creation of a problem in trying to do the three summer jobs of planting, harvesting, and field management all at the same time, squeezing out spring-sown crops. Corn is a high yield crop sown in summer, but since it cannot withstand either drought or waterlogging, while soybeans can both tolerate waterlogging and

help nurture soil fertility, as well as being a crop the masses like to grow, soybeans should be restored to their appropriate position as a summer-sown crop, and their planting expanded. The tolerance of gaoliang to waterlogging is even greater, and gaoliang can supply some of the need for construction materials and fuel. Their planting in low-lying areas should be appropriately expanded to insure harvest of consistent yields. Millet can both be used to vary grain varieties and to provide high quality feed for livestock. It should be revived and developed.

This region is an important integral part of the Yellow River basin cotton growing area, and it is the major base in Shandong Province for cotton production. However, the following several problems require solution: 1) Consistent cottonfield acreage should be put into a proper relationship between grain and cotton so that grain does not exert pressure on cotton production, and to assure the cotton growing area. Second is a reduction in the ratio of cottonfields on saline-alkaline, low-lying, waterlogged, and infertile land. 2) Readjustment of cottonfield patterns so as to better strengthen leadership, to use advanced techniques for growing cotton, to promote consistently high yields of cotton, to increase the cotton commodity rate, and to bring into being the mechanization of cotton growing. Suitable readjustment in current cottonfields and concentration of growing areas should be done for these purposes. Right now there are 14.82 million mu of scattered cottonfields, spread over 343 communes. Management of these cottonfields is crude; yields per unit of area are very low; much cotton is held back by growers; and the commodity rate is low. These fields should be readjusted and concentrated in communes and brigades where conditions of production are fairly suitable. The overall trend in such a readjustment should be concentration on high land of cotton areas now located on low-lying land; concentration in high yield areas rather than in low yield cotton growing areas, the extent of concentration being controlled by communes at 30 to 40 percent of the total cultivated area. In planting, sizes of plots should be regulated, continuous tracts being set aside for the purpose so as to vigorously increase cotton yields per unit of area. This would favor full use of nature, centralize administration and management, promote modern scientific and technical methods, and increase cotton output.

2. Issues in Land Use and Land Nurture

The extent of land nurture in this region is fairly low, most soil being of low fertility. A survey done in Liaocheng Prefecture shows organic content of the soil to be 0.7-0.9 percent, the average quick acting phosphate to be less than 10 milligrams per kilogram, which is lower than the normal phosphate content of the soil (usually 20 milligrams per kilogram). In order to build up soil fertility, in addition to increasing applications of fertilizer, one important way is development of green manure crops, making the growing of green manure a part of planting plans and a system of crop rotation, and advocating multiple cropping, intercropping, and interplanting of green manure and grain. Green manures suited to growing in this region include sesbania, alfalfa, and Chinese trumpet creeper. One planting method is, following harvest of wheat, to plant green manure, suitable to low-lying waterlogged areas where the amount of land is great relative to population and where fertilizer is insufficient. Another way is, before harvesting is done, to interplant corn with wheat before the wheat has been harvested

and then to plant green manure after the wheat has been harvested. This is suited to places lacking in fertility. During the first year, wheat and sesbania may be intercropped, and after the sesbania has been plowed under the second year, corn may be interplanted. Following the wheat harvest, green manure may be planted. This method is suited to places in which water and fertility conditions are fairly good. In cotton growing areas, cotton and green manure can be intercropped or rotationally planted. Though intercropping with green manure takes up land area, through a combination of broad and narrow rows, and a mixture of tall and short crops, which permit circulation of air and penetration of light, light and heat conditions will be good. Nodule bacteria on the roots of green manure crops can fix nitrogen and increase soil nutrients. When green manure is turned under, the organic content of the soil is also increased. A survey done in the Eyapo Brigade in Yanggu County showed an overall nitrogen increase of 43 percent in soil where green manure was planted (for 1-2 years) and turned under as compared with soil where no green manure was planted. Total phosphate increased by 15.9 percent; quick acting potash increased by 81.6 percent; and organic matter increased by 33.2 percent. An increase in wheat yields averaging 125.4 jin per mu were harvested for a yield increase of 68 percent.

The rotational cropping system should be reformed and a system that combines soil use with soil nurture instituted. In view of the problems in this area whereby the pattern of crops shows growing of grain alone and too great a multiple cropped area, henceforth the system of two crops a year should be scaled down, and the system of three crops every 2 years should be increased so as to restore and increase soil fertility, moderate the pressures on the workforce, and obtain consistently high yields. As a practical matter, in places where population is large relative to land, and in places where farming levels are fairly high, the area of two crops a year may be a little larger. However, in places where land is abundant relative to population, and where water and fertility conditions are somewhat poor, the area of two crops a year should be retrenched, and the area of three crops every 2 years expanded so as to nurture the soil and to rotate land allowed to lie fallow during the winter season. In the various counties along the seacoast, there should be a reduction in the system of two crops each year, and an increase in three crops every 2 years, expansion in the rotational cropping of grain and beans and grain and green manure, while at the same time some of the saline-alkaline land may be used to grow pasture grass, green manure, and gaoliang to establish a fodder base for the development of the cattle, sheep, and rabbit livestock industry in a combination of farming and animal husbandry.

3. The Problem of Reforming the Low-Lying Alkaline Lands

There are 6.5 million mu of low-lying, waterlogged and saline land in this region, totaling 27.7 percent of the cultivated land. It is distributed along rivers, in tracts of flat land, and throughout the coastal area. Most of the low-lying land is waterlogged, and if it is not waterlogged, it is alkaline. Waterlogging and waterlogging go along with each other, and this is the region where waterlogging is most severe. Analysis of statistical data for 21 of the 26 years from 1949-1975 shows waterlogging to have been fairly serious in 10 of

those years of almost half of them. The waterlogged area was generally about 6.5 million mu, or as much as almost 10 million mu. In many years the waterlogged area averaged one-third the total cultivated area, and grain yields fell by more than 30 percent. Therefore, vigorous improvement in low-lying, waterlogged, alkaline lands is a major way to change the backward condition of agriculture on the Northwestern Shandong Plain. Looked at in terms of land utilization, ways to improve and use low-lying, waterlogged, alkaline land are as follows: 1) A large amount of water conservancy construction, improvement in the drainage system, and intensification of the equipping of the system of ditches in separate systems for irrigation and drainage. Digging out of rivers to clear them of silt, and dredging of watercourses to increase drainage capacity. Spread of flatland cultivation in cofferdams, and storing of sweet water to suppress alkalinity, used in conjunction with drainage of water through shallow ditches and drainage of water from terraced fields. 2) Planting of crops that tolerate waterlogging and alkalinity and spread of green manure to remove alkalinity. A survey done in Jiazhuang Brigade, Gucheng Commune, Shen County shows that the salt content of alkaline soil planted to green manure for 2 years was 0.18 percent less than for soil not planted to green manure. Soil planted to green manure for many years had 0.2 percent less salt content than soil not planted to green manure. In low-lying alkaline fields where water resources are fairly good, a certain amount of paddy rice may be grown to wash away and suppress alkalinity-salinity. Experiments have shown that the growing of rice for a single season can purge the soil of from 40 to 90 percent of its salinity. But where not much rice can be grown, drainage has to be done. 3) Planting of trees to create forests. Afforestation can lower the underground water table and reduce surface evaporation. Some low-lying, waterlogged, alkaline areas can plant false indigo, poplars and willows, and locust trees, which tolerate waterlogging and alkalinity. 4) Diversion of silt from the Yellow River to effect improvements. Huimin Prefecture has achieved success in the diversion of the Yellow River to drop silt to improve low-lying, alkaline soil. At Xiaoying Commune in Boxing County, on both shores of the Yellow River over an area of 150,000 mu of low-lying alkaline line, silt has been deposited to improve the soil, and a switch made to the planting of rice for yields of more than 500 jin per mu.

4. The Problem of Developing Wastelands for Use

This region has a total of 6,336,600 mu of wasteland, amounting to 11.16 percent of the total area (of which sandy wastes account for 0.32 percent, alkaline wasteland accounts for 2.16 percent, coastal wasteland accounts for 7.45 percent, and coastal beaches account for 1.23 percent). More than 90 percent of the wasteland is concentrated in Huimin Prefecture, distributed mostly at Caizhouwan, Yongfeng He, Dao He, Shenxian Gou, Wu He, Tao He, Nanbeiwang, Xinhu, Taoer He, Tanyang, Chengkou, and Chaojian, which are 12 reclamation areas in the region. Approximately 3 million mu[1] of wasteland can be reclaimed, 15.7 percent of which is suitable for farming, 34.5 percent of which is suitable for forestlands, and 49.8 percent of which is suitable as pastureland. In terms of quality and condition for development of use, the wastelands may be divided into three general categories as follows. One is the new silt lands of about

1. Data derived from Huimin Prefecture Agriculture and Land Reclamation Bureau, Shandong Province, 1979.

1.2 million mu where the silt was accumulated fairly late in time, its quality is quite good, and the soil layer is quite thick (1.4-1.6 meters). It is only slightly saline-alkaline; grass cover is fairly good; and it can be reclaimed for agricultural use. Second is the mildly alkaline land, of which there is about 600,000 mu distributed rather generally. Soil quality of this land is poor; grass cover is scant, and alkaline-tolerant crops such as alfalfa, sesbania, safflowers, false indigo, and sunflowers, as well as woods may be planted to protect the grassland and vigorously develop a livestock industry to establish livestock industry production bases. Third is sandy soil covering 300,000 mu, mostly useable for afforestation with locusts, willows and poplars. The remaining seriously alkaline soil amounts to about 900,000 mu, and can be developed mostly with reeds, and chaste trees to provide raw materials for plaiting. In order to sensibly develop use of wasteland resources along the seacoast, a further survey of wastelands should be organized to determine the quantity of wasteland, the quality and conditions for developing its usefulness. There should be unified planning, adaptation of general methods to local situations, and incremental development of this land for use. Development should be by a combination of state ownership and collective in which state ownership predominates, and a combination of animal husbandry, forestry, and farming in which animal husbandry predominates, with much rotational cropping of grasslands. Beaches along the seacoast can develop mostly a salt industry and aquatic product hatching industries. In addition, some inland sandy wastelands and alkaline wastelands can develop mostly forestry and the livestock industry, in a combination of forestry, livestock raising and farming.

5. Problems in Development of Irrigated Land and the Northward Transfer of Water From the South

In order to triumph over damage caused by drought, waterlogging, and alkalinity, ever since Liberation the party and government have undertaken large water conservancy construction, which has steadily increased the irrigated area. In 1949, the irrigated area in this region amounted to 3 percent of the total cultivated area; in 1965, it was 15 percent; in 1970, it was 30 percent; and by 1978 irrigated land amounted to 18,643,800 mu, or 62.48 percent of the total cultivated land area. The extent of increase in water conservancy increased remarkably, so that the average amount of irrigated land per capita is 1.36 mu. Henceforth, with the building of farmlands with consistently high yields, a shortage of water resources will continue to impair further development of agriculture. Survey shows that we consider the major ways to solve the water shortage over the near term to be: 1) Accelerated fitting out of water conservancy projects to the most in irrigation benefits from existing water conservancy facilities, to improve irrigation techniques, and to increase the water utilization rate. Use of various measures to increase the water utilization rate from the present 30 to 40 percent to 40 to 50 percent, thereby expanding the irrigated area by 5 million mu. 2) Sensible management of water resources within the region. Areas near the Yellow River should vigorously develop use of underground water, and develop well irrigation so that water from the Yellow River can be used in areas lacking water. Liaocheng Prefecture's proposal for transfer of water from the west eastward, and Dezhou Prefecture's proposal for the transfer northward of water from the south (the waters of the Yellow River) are all imaginative plans for rational use of existing water resources within the region.

3) Adaptation of general methods to local situations for using brooks and ponds in the storage of water to expand back-up sources, and increase underground water, using water from seasons with much water for seasons with little water to solve the problem of a lack of water in "funnel areas." 4) Study and summarization of experiences in the scientific use of water, experiments in adapting general methods to local situations and spreading new irrigation techniques.

The northward diversion of waters from the south is a major and huge water conservancy project in China that not only ramifies into the use of water for agriculture and the development of production on the Huang-Huai-Hai Plain, but also raises questions of changes in the natural environment of the great plain. Since this is a matter affecting the total picture, it must be carefully considered, consideration being given on the basis of existing water resources and the state of their use, to lessons learned from diversion of the Yellow River, and the economic impact. We believe that in the short term it will not be possible to divert waters from the Yangtze River to the Northwestern Shandong Plain, the reasons being as follows: 1) Locally existing water resources have not been fully inventoried. Though water conservancy departments at various levels have an understanding of some existing water resources, the overall understanding is fairly unrefined. Full scientific understanding is still lacking of just how much water there is in the region, and how much water is lacking. 2) Water conservancy projects have yet to be fully equipped. Water and soil (no leveling of the land) are not a coherent whole, and the level of irrigation technology and management is low. Consequently, utilization of water resources is incomplete and irrational. Were various measures adopted to increase the water utilization rate, the potential would be fairly great. 3) In this region, the closeness to the surface of the underground water table causes serious damage through waterlogging and alkalinization. Survey shows that with the revival in 1970 of diversion of the Yellow River for irrigation, a startling tendency toward increase in the amount of saline-alkaline soil has occurred in some places. Should the Yangtze River also be used to provide irrigation, given the current levels of irrigation technology and management, the occurrence of secondary salinization of the soil would be unavoidable. 4) Once southern waters are diverted northward, the ordinary level of the Beijing-Hangzhou Canal will be higher than the water level in other watercourses. This would cut off the outlet for drainage of water in the broad basin to the west of the canal, seriously impairing both drainage of waterlogging and drainage through seepage. Investment would be great and costs high. 5) It is estimated that the raising of the waters of the Yangtze by several levels to the area north of the Yellow River would cost an average 0.025 yuan per cubic meter, and to get it to the fields would cost an average of 0.04 yuan per cubic meter. The country can neither afford such huge capital construction investment over a long period of time, nor can communes, as consumers of the water, afford such huge expenditures for water. On the basis of the foregoing superficial analysis, we feel that solution to the problem of water conservancy construction for the Northwestern Shandong Plain lies, in the near term, not in the movement of the waters of the Yangtze, but rather in solution to the problem of how best to make full use of water resources already existing in the region. Existing financial, material,

and human resources should be put to work in equipping water conservancy projects, and in strengthening management-to increase, to the maximum extent possible, the utilization rate of existing water resources. As for long-range plans to divert southern waters northward, because of the impact on various aspects of the natural environment and the economy, it is recommended that those concerned continue thoroughgoing study to come up with a scientific plan.

9432
CSO: 4007/31

REGULAR FARMING OF PRIVATE PLOTS BY SAME INDIVIDUALS ENCOURAGED

Taiyuan SHANXI RIBAO in Chinese 23 Sep 81 p 2

[Article by Wang Anguo [3769 1344 0948], "Private Plots Should Not be Changed Willy-Nilly"]

[Text] Central Committee policies on private plots have been well received by the peasants are still somewhat apprehensive. They fear that production teams may, at any time, switch around private plots, and they wish that private plots were as firm as systems of responsibllity. We should act according to the will of the people.

There are historic reasons for peasant fears that private plots are not firm. During the "Great Cultural Revolution," private plots would be taken away this year only to be given back next year, given back and taken away, taken away and given back. In some places during periods when private plots were given to commune members to farm, the plots were changed twice every 3 years. After the peasants improved the fertility of their private plots with great effort, the plots were changed again. Reasons for willy-nilly changing of private plots are three: One is that some production teams desire to use commune member enthusiasm for farming private plots to reform the "three categories of fields." Another is that a population changes, private plots change along with it. Third is with every change in cadres goes a change in private plots.

"Think things over; don't knock things over." When private plots are firm, commune members can devote themselves to building up the soil, to orchestrating private plot output, planting mulberry and raising silkworms, or growing perennial crops or pharmaceutical materials. Still other commune members make plans to improve the soil to increase its fertility so that they can increase their income from private plots.

In order to make private plots firm, it is necessary, first of all, to continue to eliminate leftist influence. Second, it is necessary to democratically formulate some needed systems and not let a small number of cadres say what will be done.

9432
CSO: 4007/60

SHANXI IMPROVES COMPETITIVENESS OF SMALL PLANT NITROGENOUS FERTILIZER

Markets Open

Taiyuan SHANXI RIBAO in Chinese 30 Sep 81 p 1

[Article by Geng Tian [5087 3944] and Tai Xian [1132 6513]: "Markets Opened For Sales of Nitrogenous Fertilizer From Small Plants in Shanxi Province; Quality Up, Costs Down, Contracts Fulfilled, and Promises Kept"]

[Text] Markets have been found for nitrogenous fertilizer produced in small plants in Shanxi Province. Problems in large overstocking of output have begun to be solved. Statistics from departments concerned show that as of the end of August the province's sales of ammonium carbonate totaled more than 1,129,000 tons, and the quantity of ammonium carbonate in storage had declined to somewhat more than 160,000 tons. As a result, the Provincial People's Government called upon small nitrogenous fertilizer enterprises to operate at full capacity and strive to increase output to make a greater contribution.

During the past 2 years a situation of overstocking of nitrogenous fertilizer produced by small plants has occurred in Shanxi Province. According to year end statistics last year, the amount of ammonium carbonate in storage throughout the province totaled more than 600,000 tons, and because sales were dull and funds did not circulate, some enterprises stopped or restricted production. In order to change this situation, this year provincial chemical fertilizer companies and small enterprises producing nitrogenous fertilizer promoted various forms of a system of economic responsibility, improved administration and management, raised quality, lowered waste and costs, and made efforts to increase product competitiveness. In addition they made product sales the determinant of whether an enterprise should continue to exist and develop. They also improved quality of packaging on the basis of users' views, honored contracts in making sales, kept their word, adopted fairly flexible methods in marketing methods and pricing, and gained the confidence of customers for steady expansion of their markets. As of the end of August, the province had signed contracts with customers outside the province for the supply of 1 million tons of goods. Ammonium carbonate sales to Guangxi, Shandong, Sichuan, Anhui, and Henan have reached more than 700,000 tons. Sales of chemical fertilizer within the province have also recorded achievements, amounting to more than 420,000 tons between January and August.

'SHANXI RIBAO' Commentary

Taiyuan SHANXI RIBAO in Chinese 30 Sep 81 p 1

[Article: "Strive To Increase Small Plant Output of Nitrogenous Fertilizer"]

[Text] Accompanying establishment of systems of responsibility for rural production is an increase in peasant enthusiasm for use of chemical fertilizer, and the quantity required has steadily increased. In national terms, the shortage of fertilizer continues to be very great, and the state must every year import chemical fertilizer from abroad. Development of large and medium size chemical fertilizer plants faces numerous limiting conditions and quite a few difficulties; therefore, for some time in the future small chemical fertilizer plant production will continue to enjoy bright prospects. We must have a very clear understanding on this point.

Shanxi Province is a land of coal where development of small plant chemical fertilizer production enjoys exceptional advantages. Small plant chemical fertilizer production is in the category of a coal processing industry, and vigorous expansion of small plant chemical fertilizer production possesses major significance for the utilization of local resources, making the most af advantages, enlivening the province's economy, rendering assistance to agricultural production, and increasing government revenues. It also plays a positive role in reducing transportation of coal outside the province, in reducing pressures on railroad transportation, and in helping agricultural production in other provinces. Now that markets have been found for small plant nitrogenous fertilizer, CCP committees at all levels must continue to take in hand small plant chemical fertilizer production. Except for a small number of small nitrogenous fertilizer enterprises that have long since halted production, and where the production situation is not good, which positively cannot start up again, measures must be actively taken to operate at full capacity now in an effort to increase output to make a greater contribution to the support of agriculture.

9432
CSO: 4007/60

INSTRUCTIONS GIVEN FOR PLANTING WINTER WHEAT THROUGHOUT SHANXI

Taiyuan SHANXI RIBAO in Chinese 23 Sep 81 p 2

[Article by Li Huanzhang [2621 3562 4545]: "Summarize This Year's Experiences For Good Planting of Next Year's Wheat"]

[Text] Shanxi Province has harvested a bumper wheat crop despite this year's continuing drought conditi ns. Apart from the strength that policies provide, we must summarize experiences in scientific farming for the good planting of next year's wheat.

The grains of wheat produced this year were plump, their weight per thousand between 3 and 5 grams higher than in ordinary years. An old farmer's saying has it that "When the wheat grows without a hitch, half again as much will be harvested." This shows that when weather conditions were right this summer during the wheat's in-the-milk stage, the foundation for plant growth and development was rather good. The unfavorable weather that for many years hurt the per thousand weight of wheat grains resulted primarily from dry, hot winds during the in-the-milk stage. This year the main reason why the wheat was not damaged by hot, dry winds was that it matured about 10 days earlier than usual. This was because temperatures during the previous winter were fairly high, resulting in the formation of strong seedlings. This, plus the early greening up of the wheat in the spring, created conditions for the later maturing ahead of time. This tells us just how important it is that sturdy seedlings be grown during the previous winter to promote early development and early maturation of the wheat.

By the so-called continuing drought is meant the especially small amount of rainfall during the wheat growing season. Rainfall during the 1980-1981 wheat growing season was the smallest amount since the 1960's; however during the times when the wheat's need for water was critical just before sowing, during tillering in the previous winter, and during jointing in spring of the following year, good rain fell in the proper amount and proper concentrations. In Shanxi Province, where water resources are lacking, this has encouraged us to enlarge the irrigated area for critical times to increase the effectiveness of water.

For sturdy seedlings, it is necessary, first of all, to pay attention to planting on time. In Jinzhong Prefecture, when bailu [around 8 September] comes early and hanlu [around 8 October] comes late, the period of the autumn equinox is the right one in which to plant wheat. In Linfen Prefecture, during chushu [around 23 August]

is the right time in the high mountains; bailu [around 8 September] is the right time for planting on the lowlands, during qiufen [the autumn equinox around 23 September] is the right time in one's dooryard, and the period of hanlu [around 8 October] is planting time along rivers. In Yuncheng Prefecture wheat should be planted no earlier than qiufen [the autumn equinox] and no later than hanlu [around 8 October]. In the far south around Fenglingdu, wheat should be planted at bailu [around 8 September] in the high mountains, and at hanlu [around 8 October] on the flatlands. Though the time for sowing differs north and south, one point in common is that from the time of sowing until winter freezing occurs, accumulated temperatures above 3 degrees centigrade of between 560 and 580 degrees are required. On-time planting requires no investment yet it can effectively increase yields.

In order to take advantage of the season and assure sowing on time, the machine-planted area should be enlarged as much as possible, and large, plump seed grain should be used. It is also necessary to select the superior varieties to each area, heavily apply base fertilizer, saturate the ground, where conditions permit, with basic moisture, use the proper quantity of seeds, and plant the seeds in properly spaced rows and patterns, doing strictly what is required for each link to win an even greater bumper harvest next year.

9432
CSO: 4007/60

WHEAT FARMING TECHNIQUES DEMONSTRATED

Taiyuan SHANXI RIBAO in Chinese 21 Sep 81 p 2

[Article by Guo Bo [6753 3134]: "Linyi County Trains Mainstay Cadres in Wheat Farming Techniques"]

[Text] The Linyi County People's Government has recently trained a group of mainstay cadres in wheat farming techniques, promoting techniques for increasing wheat output.

In Linyi County, 850,000 mu of wheat is grown. This amounts to half the farming area in the county, which is the largest wheat growing county in the province. By way of spreading new techniques in wheat growing, County CCP Committee leaders personally acted to invite Qiao Ruiqing [0829 3843 3237] and Fan Zhijie [5400 1807 2638], agronomists from the Provincial Wheat Institute and the Provincial Cotton Institute to lecture on the "Wheat Production Dmmonstration Program" and on research on the three laws of wheat production. County Science Committee scientists and technicians gave careful coaching. In order that this job might be done well, before the end of August each commune's technicians briefed production brigade and team cadres throughout the commune on the "demonstration program" and proposed technical measures suited to local conditions for application to production team and household plots. Commune technicians contracted work on separate tracts, and production brigade technicians signed technical contracts for increased yields with teams and households. In addition, they planted model fields and control fields.

9432
CSO: 4007/60

RAISING OF LARGE LIVESTOCK ANIMALS ENCOURAGED IN LINFEN PREFECTURE

Taiyuan SHANXI RIBAO in Chinese 23 Sep 81 p 1

[Article: "Rapid Expansion of Large Livestock in Linfen Prefecture. Policies Liberalized, Measures Beneficial, Public and Private Sectors Develop Together. During Past Year Privately Raised Livestock Have Increased by More than 40,000 Head While Collectively Raised Livestock Have Increased by 8,000 Head"]

[Text] The number of large livestock raised by commune members in Linfen Prefecture this year has vastly increased. Statistics as of the end of August show a total of 51,280 head, a more than fourfold increase over the same period last year.

In the process of readjusting the internal structure of agriculture last year, the various counties and municipalities of Linfen Prefecture decided to reverse the many year trend toward decline in the livestock industry and to hasten the speed of development of the livestock industry. To this end, all echelons of CCP committees further emancipated mentality, and liberalized policies. While developing collective large livestock, they gave active support to the raising of livestock by individual commune members. The counties and municipalities used public announcements and documents to spell out the varieties and limitations on numbers of large livestock that commune members could raise, brooking no interference from anyone. Commune members who provided manure to production teams from their raising of livestock were to be paid fair compensation. Each county and municipality actively developed specialized households and specialized persons for the raising of livestock, and now there are more than 50 specialized households in the prefecture engaged in the raising of large livestock.

in order to solve commune member difficulties in getting the funds to purchase large livestock, the prefecture made available to commune members loans totaling 11.9 million yuan for the purchase of large livestock. Each of the counties and municipalities in Pingchuan alloted a certain amount of livestock feed or grain for the feeding of livestock for households raising large livestock. For each head of large livestock raised by commune members in mountain regions, between one and 5 mu of hillside slope was allocated for grazing. All veterinary medicine stations and breeding stations also took the initiative in going into the countryside to provide veterinary and breeding services. Quite a few breeding stations also signed contracts with commune members to provide breeding services.

With the liberalization of policies and beneficial measures, commune member enthusiasm for the raising of large livestock reached an all-time high. During the same period last year, commune member raising of large livestock in the prefecture amounted to only 9,379 head, but now it has expanded to 51,280 head. The number of collectively raised large livestock has also increased by almost 8,000 head over the same period last year.

9432
CSO: 4007/60

CHENGDU TAKES FLOOD PREVENTION MEASURES

HK051456 Chengdu Sichuan Provincial Service in Mandarin 2300 GMT 4 Nov 81

[Text] The agricultural, forestry, water conservancy, meteorological and other relevant scientific research units and the disaster-stricken areas in our province have officially formed scientific groups to sum up experiences concerning the unusually serious floods witnessed this year. The aim is to further ascertain and grasp natural laws and seize the initiative to transform and exploit nature. In order to do this job well, the provincial meteorological and agricultural bureaus have successively dispatched work groups composed of chief engineers and other scientific personnel to penetrate deep into the midst of disaster-stricken areas to make investigations. The Chengdu Geography Institute, the provincial hydrological station and the Pujiang hydrological substation and the relevant departments of Nanchong, Mianyang, Ziyang, Neijiang, Rongchang and other areas have separately written scientific research reports and through scientific work groups have summed up experiences and lessons related to floods. Data summed up by various areas show that the main cause of floods is heavy rainstorms. But there are also many factors attributable to man. For example, all irrational human economic activities, such as upsetting the ecological balance, causing soil ercsion and blocking drainage systems, and so forth, have, to different degrees, added to the seriousness of a natural disaster.

According to investigations of seven communes of Ziyang County along the Tuo River, hosts of facts show that none of the areas that reclaimed land from rivers escaped the attack of the recent floods. It is suggested that we should now further solve the problem of understanding the great significance of afforesting both banks of the river--a problem involving cadres at all levels. We must quickly carry out the policy concerning afforested areas along rivers, cooperate in obtaining proper saplings and tree strains to improve the quality of forests, and set up tree nurseries, and so forth at fixed locations in a planned manner. Investigative data obtained by Ziyang County about the laws of floods affecting the actual geographical position also tell us that in our future town planning, we must take antiwaterlogging and anti-flood measures into consideration. In selecting sites for factories, villages, residential housing, and so forth, we should in principle be guided by a flood water level above that recorded over the past 50-plus years. Residential housing should be arranged in orderly rows to facilitate the ebb and flow of floodwaters. Town and city drainage systems must be kept in good repair to ensure drainage. After investigating the mud-rock flow and other natural disasters in Sichuan, the Chengdu Geography Institute has put forward future preventive measures.

CSO: 4007/81

BRIEFS

BUMPER TEA HARVEST--Zhejiang again harvested a bumper crop of tea this year. An annual harvest of tea leaves surpassing 50,000 dan is being harvested with greater frequency in a greater number of counties. Tea leaves are one of the major products of Zhejiang. Since last winter and this spring, the leadership at every level in the tea producing areas conscientiously implemented the party's economic policy in the rural areas, set up and perfected various types of responsibility systems such as specialized lines of production under contract with remuneration according to output and mobilized the masses to adopt advanced technological methods in order to overcome the detrimental effects brought by every kind of calamitous weather so that a bumper harvest of tea was obtained. The total output of tea leaves for the province may exceed 1.6 million dan which would be a marked increase of 1,508,000 dan more than last year. Last year there were only seven counties that had a tea output that amounted to or exceeded 50,000 dan. This year the number has already reached eleven, among which are the four counties of Sheng, Shao, Zhuji and Lin'an which have already surpassed the annual output mark of 100,000 dan. This was written by Hu Ping [5170 0988] of the Zhejiang Province Agricultural Department. [Text] [Hangzhou ZHEJIANG RIBAO in Chinese 2 Oct 81 p 1]

CSO: 4007/86

AUTHOR: ZHANG Ju [1728 5281]
YU Weixue [0060 4850 1331]
ZHAO Guoxun [6392 0948 8113]

ORG: ZHANG, YU of Department of Biology, Harbin Teachers University; ZHAO of Bin County Research Institute of Agricultural Sciences, Heilongjiang Province

TITLE: "Stimulation of Growth and Augmentation of Yield of Soybean by ^{60}Co Gamma Ray Irradiation of Seeds"

SOURCE: Shijiazhuang YUANZINENG NONGYE YINGYONG [APPLICATION OF ATOMIC ENERGY IN AGRICULTURE] in Chinese No 3, 17 Sep 81 pp 7-12

ABSTRACT: Results of experiments by 4 organizations at 8 points in 1978-80 proved that ^{60}Co irradiation of seeds can stimulate the growth, increase the area of photosynthesis, promote the accumulation of dry substance, and raise the rice yield. Compared with the control, the yield increase is 3.57-17.20 percent. In 1980, comparative experiments in 25.63 mu with 2 kr produced an average yield increase of 10.07 percent, in 22.20 mu with 3 kr 3.33 percent. Hence, the paper concludes that application of ^{60}Co to irradiate seeds of soybean can promote yield increase and the suitable dosage is about 2 kr.
This paper was received for publication on 26 Jan 81.

AUTHOR: XIA Yingwu [1115 5391 2976]
XU Jiekun [1776 2638 0981]
QIU Simi [6726 1835 1378]
ZHAO Xinmiao [6392 2450 5379]

ORG: XIA, XU of Zhejiang University of Agriculture; QIU, ZHAO of Zhuji County Institute of Agricultural Sciences, Zhejiang Province

TITLE: "Shuangke No 1, a New Rice Variety Produced by Using Early Maturing Mutant"

SOURCE: Shijiazhuang YUANZINENG NONGYE YINGYONG [APPLICATION OF ATOMIC ENERGY IN AGRICULTURE] in Chinese No 3, 17 Sep 81 pp 12-17

ABSTRACT: To date most of the mutant crop varieties are bred out directly from the mutant and a few of them are products of hybridization of the mutant with other breeds. In recent years, successful use of a mutant as the parent in hybridization projects has been frequently reported and the number of resultant varieties increases every year. Since 1972, the authors have used an early maturing mutant, 72-9 obtained from IR_8 to carry out extensive hybridization with local breeds and other mutants. In 1977, 2 new varieties are bred out. This paper reports one of the two: the Shuangke No 1. The theoretical basis of using that particular mutant, the process of selection and breeding Shuangke No 1, its extension, and its performance in 19 experimental sites are recounted.
This paper was received for publication on 26 Jan 81.

AUTHOR: LOU Hongzhang [2869 3163 4545]
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ORG: Both Research Institute of Atomic Energy Utilization, Chinese Academy of Agricultural Sciences

TITLE: "Reproductive Capacity of Semi-Sterile Progeny of Corn Borer (Ostrinia furnacalis Gurnee) Irradiated by Gamma Rays"

SOURCE: Shijiazhuang YUANZINENG NONGYE YINGYONG [APPLICATION OF ATOMIC ENERGY IN AGRICULTURE] in Chinese No 3, 17 Sep 81 pp 18-25

ABSTRACT: The release of radiated semi-sterile corn borers is one of the means of prevention and control of this pest. Offsprings of these semi-sterile male and female pests after they mate normal ones in the field may still occur and the survival capability and reproductive potential of these larvae provide the necessary data for selecting the optimal radiation dosage for producing the semi-sterile pests and for estimating the effect and the change of the field population. Using corn borers gathered from the western suburb of Beijing, Chongming of Shanghai, etc. the authors irradiated them with ^{60}Co (10-40 kr) and allowed them to mate with normal borers. The eggs (F_1) were kept moist in culture dishs and hatched under 20-28°C. After emergence, the imagoes were back-crossed to determining the mating ability, the number of eggs produced, and the rate of emergence. If larvae were produced by F_2 eggs, they were continuously fed for qualitative and quantitative comparison with F_1. Results indicate that to be effective, doses below 20 kr should not be used.
This paper was received for publication on 30 Dec 80.

AUTHOR: HE Zhichang [0149 0037 1603]

ORG: Department of Biology, Wuhan University

TITLE: "Absorption and Distribution of ^{32}P in Early Maturing Hybrid Rice and Its Parental Lines"

SOURCE: Shijiazhuang YUANZINENG NONGYE YINGYONG [APPLICATION OF ATOMIC ENERGY IN AGRICULTURE] in Chinese No 3, 17 Sep 81 pp 31-34

ABSTRACT: This paper studies the ^{32}P absorption and distribution conditions of 2 early xian hybrids produced by using the Honglianhuaai-15 sterile line. By comparison, the hybrids are found to absorb and transport to spikes and leaves obviously more ^{32}P than the parent sterile line and the restorer line before the completion of the heading time; by the milk-ripe time and afterwards, they absorb and deliver less than their parents. Based upon results of this study, the author recommends that in hybrid rice production attention should be given to water and fertilizer management of the late stage to prevent early withering and to guarantee supply of phosphorus. This is very important if high yield is to be obtained from hybrid rice.
This paper was received for publication on 24 Oct 80.

AUTHOR: DONG Yide [5576 0110 1795]
SUO Binhua [4792 3453 5478]
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ORG: All of Jianlin University of Agriculture

TITLE: "Using Radioimmunoassay for Detecting Bacterial Leaf Blight (Xanthomonas oryzae) of Rice"

SOURCE: Shijiazhuang YUANZINENG NONGYE YINGYONG [APPLICATION OF ATOMIC ENERGY IN AGRICULTURE] in Chinese No 3, 17 Sep 81 pp pp 47-51

ABSTRACT: Since the technique of radioimmunoassay was established by YALOW and BERSON in 1956, it has now been extensively used in biology and medicine. Its aplication in the diagnosis of infectious diseases in domestic animals has also been reported but its use in the study of plant diseases is still in a primary research stage. In 1979, the authors experimented with its application to detect rice leaf blight pathogens. Processes of labeling the microorganism, preparing the antibody serum, and the radioimmunoassay are described. Results of determination of the pathogens in rice seeds and rice plants are reported. The authors conclude that radioimmunoassay is a highly accurate and specific technique for examining bacterial or virus pathogen carrying seeds or plants. Some concrete problems, such as preparation of highly efficient antibody and high ratio antigen, the selection of solid phase material of good absorbency, etc. remain to be worked out with future experiments.
This paper was received for publication on 20 Nov 80.

AUTHOR: WU Jinshui [0702 6855 3055]
ZHANG Zengquan [1728 1073 0356]
JIN Yafang [6855 0068 2397]
XIA Qiming [1115 0366 2494]

ORG: All of Shanghai Municipal Academy of Agricultural Sciences

TITLE: "Studies on the Intake of Rice Plant Juice by Brown Planthopper (Nilaparavata lugens) Using ^{14}C and ^{32}P Labeled Rice Plants"

SOURCE: Shijiazhuang YUANZINENG NONGYE YINGYONG [APPLICATION OF ATOMIC ENERGY IN AGRICULTURE] in Chinese No 3, 17 Sep 81 pp 52-55, 58

ABSTRACT: This paper introduces the method of using ^{14}C and ^{32}P labeled rice plants to feed brown planthoppers of various states of growth to determine the intensity of radiation of the rice plant juice taken by the planthoppers during the different stages of growth of the pest and the different stages of growth of the rice plant. Preliminary results indicate that short-winged female imagoes eat more than other types or states of the pest and the quantity of plant juice eaten is the greatest during the spike-forming stage and the smallest during the seedling stage. More juice is eaten from xian rice than geng rice during the early stage of tillering. Comparison of xian and geng rice of other stages of growth and development is to be the subject of future experiments and the complex relationship between the feeding quantity and the external environment, such as temperature and humidity, is also to be clarified in the future.
This paper was received for publication on 19 Feb 81.
6248
CSO: 4009/92

AUTHOR: ZHAO Heju [6392 0678 0658]

ORG: Research Institute of Oil Plants, Chinese Academy of Agricultural Sciences

TITLE: "How to Transplant Rape"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 9, 17 Sep 81 pp 13-14

ABSTRACT: The triple-crop system of rape-rice-rice is generally practiced in the rape-producing region of the Changjiang valley; therefore, rape seeds must be planted in early Oct while the late rice crop is not ripe and ready for harvest until late Oct or early Nov. Hence, a great contradiction exists with regard to timing, and if the technique of cultivating rape seedlings for transplant is adopted this contradiction can be effectively resolved. Moreover, in regions of the dual crop system of upland cotton and rape, the seedling transplant technique must also be adopted to guarantee high yield for both crops. With the transplant technique, rape may be seeded suitably early to compensate for insufficient growing time in the field. After transplanting, roots develop before new leaves and this fact requires that only large and strong rape seedlings are suitable for transplant. Based upon this and other special characteristics of transplanted rape plants, the paper describes in detail the special technique and procedure of growing rape seedlings and transplanting them.

AUTHOR: None

ORG: Administrative Office, Yulin District, Guangxi Province

TITLE: "Manage Joint Seed Company Well to Promote the Development of Hybrid Rice"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 9, 17 Sep 81 pp 6-7

ABSTRACT: In order to carry on hybrid rice development, the key problem of propagation for seed preparation must first be overcome. Those who are in charge in Yulin District summarizes the seed preparation experience of Mapo Commune of Luchuan County for the purpose of finding a new and economical technique. After the Mapo Commune Seed Station was established in 1979, the brigades became dependent and no one was particularly interested in the problems of quality, yield, timely supply, or selling. Negotiations ensued and the Commune Joint Seed Company was created in Aug 80. Some farmer-specialists are employed to take care of production. The brigades sign contracts to order seeds and the company plans its production according to the orders and has its own accounting system to calculate profit or loss. With the company to run the business of seed preparation, the yield has increased 37 jin/mu to reach 105 jin/mu and the purity and quality of seeds are such that aside from supplying the needs of 20 thousand mu of hybrid rice in the commune, it also sells 40 thousand plus jin to units outside the commune. From the profit, beyond bonuses distributed to units and employees, the company has accumulated 480 thousand jin of grain and 50 thousand yuan of cash. The joint seed companies established by Bobai and Beiliu Communes following the example set by Mapo Commune also report similar successful operations.

6248
CSO: 4009/96

AUTHOR: None

ORG: Xiangyun County Bureau of Agriculture; Xiangyun County Center of Agricultural Sciences

TITLE: "Investigation Into Ways of Increasing the Yield of Upland Wheat and Its Results"

SOURCE: Kunming YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 25 Sep 81 pp 8-10

ABSTRACT: The regular wheat acreage of Xiangyun County is about 120 thousand mu, and about half of it is upland wheat. Due to the fact that the total rainfall of the 6 months of Nov-Apr is only about 150 mm, the cultivation has been rough, and the breeds are poor in adversity resistance, the unit yield of wheat has stayed around 100 jin/mu for a long time. In the past 2 years experiments have been carried out in terms of breeds and cultivation technique. A project of systematic selective breeding launched in the middle 70's has bred out the 601 which is early maturing and drought resistant. In 1980, the 601 was extended in 1479 mu and produced an average yield of 388 jin/mu, 60 percent above the deteriorated local breed Longer. The 7034, a product of Zhaotong District Center of Agricultural Sciences was also introduced in 1980. In experimental stations it has demonstrated yield increases of 32.4 to 59.2 percent. Under the adverse condition of the county, the paper concludes that early and deep plowing, heavy fertilizer application, suitable increase of plant density, and mulching to reduce evaporation appear to be effective for increasing the yield of upland wheat.

AUTHOR: XIA Liqun [1115 4539 5028]

ORG: Yunnan Provincial Plant Protection and Inspection Station

TITLE: "Investigation Into the Comprehensive Technique of Prevention and Control of Wheat Stripe Rust in Yunnan Province"

SOURCE: Kunming YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 25 Sep 81 pp 11-14, 7

ABSTRACT: Following 1979 and 80, the central and northern wheat producing regions of the province again suffered heavy losses from stripe rust. The Provincial Department of Agriculture ordered the station to call a wheat rust symposium in Jun to analyze the reason for the 3 continuous years of epidemics and to find countermeasures. Through analysis, it is understood that after upland wheat harvest, the grains left in the field produce self-sown wheat seedlings which serve as hosts for the oversummering stripe rust pathogens. Under the weather condition of warm winters and cool summers, wheat crops may be seen all year long to provide a favorable ecosystem for the stripe rust. It is suggested that this continuous cropping cycle must be broken off, i.e. the fall wheat crop should be omitted. Further clarification of stripe rust resistance of various breeds and the use of drugs to produce temporary relief from the disease are also acknowledged to be necessary.

AUTHOR: YANG Changshou [2799 2490 1108]

ORG: None

TITLE: "Preliminary Viewpoints Concerning the Problem of Prevention and Control of Wheat Stripe Rust in Yunnan Province"

SOURCE: Kunming YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 25 Sep 81 pp 15-19, 4

ABSTRACT: Following 1963, 73, 79, and 80, 1981 is another year of heavy damage from stripe rust in the wheat producing region of central and western Yunnan. The disease spread to 2.7 million mu to create a loss of 150 million jin of wheat. The author analyzes the increasingly severe problem of stripe rust from the viewpoints of ecology, epidemiology, breeding technique, and breed application. Based upon the analysis, the author maintains that the basic strategy for the prevention and control of wheat stripe rust is a reasonable utilization of disease resistance of the host, i.e. breeding disease resistant varieties. Unfortunately, due to mutation of pathogens, a newly introduced disease resistant breed often loses its resistance in a few years. From either the theoretical or the practical viewpoint, therefore, in regions of wheat stripe rust, the quantity of self-sown wheat should be reduced and cropping summer and autumn wheat should be avoided so as to provide a closed season in the relationship between the host and the pathogens. This is also a major, and unavoidable measure for controlling wheat stripe rust.

6248
CSO: 4009/95

AUTHOR: WANG Dongsheng [3769 2639 0581]
TIAN Ronghe [3944 2837 0735]

ORG: Both of Research Institute of Hydrogeology and Engineering Geology, Ministry of Geology

TITLE: "On Chemical Classification of Ground Water With Electronic Computer"

SOURCE: Beijing SHUIWEN DIZHI GONGCHENG DIZHI [HYDROGEOLOGY AND ENGINEERING GEOLOGY] in Chinese No 5, 15 Sep 81 pp 30-33

ABSTRACT: Chemical classification of ground water, i.e. in accordance with its chemical composition, is an important method of revealing the distribution and the principle of formation of the chemical elements in ground water. Traditional chemical classification methods belong to a qualitative concept system, using mostly the 6 basic ions of Cl^-, SO_4^{2-}, HCO_2^-, Na^+, Mg^{2+}, Ca^{2+} as the index. The use of electronic computer has made it possible to introduce the numerical, or quantitative technique. The result of numerical classification produces statistical types which must await geochemical interpretation, however. A system of nomenclature based upon some major variables and measures of historical analyses and model experimentation should also be adopted to establish an internal link among statistical, hydrochemical, and genetic types to complete the work of numerical classification and interpretation. Using this new technique to classify the ground water of the Zigong District of the Sichuan basin is the experimental study by the authors reported in the paper. This paper was received for publication in Jul 80.

AUTHOR: AN Zhongyuan [1344 0112 0337]

ORG: The 00915 Troop of Chinese People's Liberation Army

TITLE: "A Study of Alkali-fresh Water in Hebei Plain"

SOURCE: Beijing SHUIWEN DIZHI GONGCHENG DIZHI [HYDROGEOLOGY AND ENGINEERING GEOLOGY] in Chinese No 5, 15 Sep 81 pp 34-39

ABSTRACT: There is, by no means, a consensus concerning the definition of alkali-fresh water. For the purpose of discussion, alkali-fresh water must be $\gamma HCO_3^- > \gamma (Ca^{2+}+Mg^{2+})$, pH >8.3-8.4, $HCO_3^- + CO^{2-}$ >25-30 percent, sodium salts content > 70 percent, however. Aside from the problem of insufficient supplementation, the use of the alkali ground water for irrigation has caused obvious alkalinization of soil in some regions of the Hebei Plain, mainly due to decomposition of some HCO_3^- ions in the sun to bond with Na^+ ions to produce Na_2CO_3. The hydrogeological condition of the alkali-fresh water region and its characteristics are analyzed. Experimental data with regard to the ion content, the ion ratio coefficient, and changes of ion relationship of alkali, saline, and mixtures of various ratios of alkali-fresh and saline-fresh, and fresh water are reported.

AUTHOR: CHEN Guangting [7115 1639 1656]

ORG: Neimeng Hydrogeological Team

TITLE: "Saline Water in the Eastern Part of Houtao Plain in Nei Menggu"

SOURCE: Beijing SHUIWEN DIZHI GONGCHENG DIZHI [HYDROGEOLOGY AND ENGINEERING GEOLOGY] in Chinese No 5, 15 Sep 81 pp 40-42

ABSTRACT: The Houtao Plain includes the western part of the Wulateqian Banner and the eastern part of Wuyuan County, being the lowest of the entire Houtao basin. The geological structure of the plain is complex and there are several neotectonic faults. The area of distribution of saline water is vast to cover more than half of the plain while in the other half, the water is mostly fresh in the upper layer and saline in the lower layers. This paper reports the geotectonic condition of the plain, the distribution of saline water, the hydrochemical characteristics of the ground water, and an analysis of the genesis of the saline water. Results of analyses of water samples of various points of the salt lake, bore holes, drainage ponds, etc. are included.

AUTHOR: YAN Taibai [7051 1132 4101]

ORG: None

TITLE: "Regional Ground Water Resources and Their Calculation in the Loess Region of Luochuan"

SOURCE: Beijing SHUIWEN DIZHI GONGCHENG DIZHI [HYDROGEOLOGY AND ENGINEERING GEOLOGY] in Chinese No 5, 15 Sep 81 pp 43-46

ABSTRACT: Within the Luochuan region, the thickness of the loess varies from 30 to 148 m. Many holes, fissures, and crevices are distributed to provide the condition for the accumulation of ground water. Atmospheric precipitation is the only source of supplementation; the average is 553.7mm/year, with half of it cencentrating in Jul-Sep. The evaporation is 1800-2000mm, however. This paper describes briefly the hydrogeology of the region before reporting the calculations of the natural resources of ground water and the runoff modulus which is 6 percent. The quantity of water resources available for development and utilization is, therefore, very limited, the paper concludes, and reasonable utilization and conservation are the only recourse.

AUTHOR: LU Rongan [7627 2837 1344]

ORG: Shanxi Provincial Research Institute of Water Conservancy Sciences

TITLE: "Determination of Hydrogeological Parameters of Phreatic Water Aquifers With Their Regime Observation Data"

SOURCE: Beijing SHUIWEN DIZHI GONGCHENG DIZHI [HYDROGEOLOGY AND ENGINEERING GEOLOGY] in Chinese No 5, 15 Sep 81 pp 47-51, 53

ABSTRACT: Based upon the observational data of several years of the shallow groundwater of several pluvial fans of Shanxi Province, the author introduces a method of using dynamic observational data to determine the water table variation supplement μ, the water conducting coefficient T, and the precipitation seepage input of phreatic water aquifers α. At present, for the first 2 parameters, field water pumping tests are mostly used, but due to localized unevenness or incomplete data gathering, etc. the margin of error is often very great. In case of precipitation seepage, empirical value is often used. On the basis of the empirical equation $\varepsilon=\varepsilon_0(1-\frac{\Delta}{\Delta_0})^n$ which has been successfully applied in Henan, Anhui, Shandong, etc. by some Chinese scientists to derive the 3 parameters, the author decides to adopt and amplify it. The theory of the method and sample computations are given. Aside from requiring more than one year's observation data, the method also has some limitations, which are briefly discussed also.

AUTHOR: WANG Ruijiu [3769 3843 0036]

ORG: Research Institute of Geodynamics

TITLE: "Artificial Recharge of Ground Water in the Changxindian Region of Beijing"

SOURCE: Beijing SHUIWEN DIZHI GONGCHENG DIZHI [HYDROGEOLOGY AND ENGINEERING GEOLOGY] in Chinese No 5, 15 Sep 81 pp 53-56

ABSTRACT: Changxindian is located in the southwest of the city of Beijing. It has an average rainfall of 633mm, concentrating in Jul-Aug. Originally, Xiaoqinghe flowed through it to provide the water for the vegetable gardens along the banks. In 1959, an earthen dam was constructed in the upper reaches and the river bed of the lower reaches has since been used for irrigation in Fangshan County. In the spring of 1964, the water level of the wells in Changxindian fell suddenly, and the water supply for agriculture and daily living was seriously affected. Related departments of the city government decided to develop artificial recharge of the ground water. The recharge practice of more than 10 years proved that although the industrial wells remain deficient, the water level of the farm wells has risen considerably. Although the Dayu Reservoir, which is the source of the recharge water, is suffering from continuous silting and its capacity has been greatly reduced, the method of recharging reported in the paper and the result are still significant.

AUTHOR: ZHANG Yuanxi [1728 0337 4406]
HUANG Cunli [7806 1317 4409]

ORG: Both of Hefei Industrial University

TITLE: "Discussion on Some Aspects of Water Balance Method for Evaluating Ground Water Resources"

SOURCE: Beijing SHUIWEN DIZHI GONGCHENG DIZHI [HYDROGEOLOGY AND ENGINEERING GEOLOGY] in Chinese No 5, 15 Sep 81 pp 71-76

ABSTRACT: There are many techniques of evaluating ground water resources but at present some organizations frequently adopt the multiple year water balance method, which in the opinion of the authors is in need of improvement. Problems concerning the method discussed in the paper include the starting year on the calendar and the starting depth of the ground water for the purpose of calculation, effects of the depth of the ground water on major balancing factors, and the calculation of the maximum depth of the ground water. In case of the starting date, the paper suggests that the use of the interpolation method, i.e. selective use of high water level, flat water level, and low water level years to produce a variation curve and a mean. With respect to the depth, the ground water depth requirements of major crops, the short duration permissible depth, the critical depth for salinization prevention, the aquifer evaporation limit depth of various types of soils are among the problems discussed and methods of calculation provided.

6168
CSO: 4009/91

AUTHOR: FAN Zili [5400 5261 4539]
CHENG Xinjun [4453 1800 0193]

ORG: Both of Xinjiang Research Institute of Biology, Soil, and Sand, Chinese Academy of Sciences

TITLE: "Interpretation of Aerial Photographs of Cultivated Soils and Their Secondary Salinization in Irrigated Areas of Xinjiang Province"

SOURCE: Shenyang TURANG TONGBAO [JOURNAL OF SOIL SCIENCE] in Chinese No 4, 5 Aug 81 pp 19-21

ABSTRACT: Cultivated soils of irrigated oases of Xinjiang, being products of prolonged production activities of men, are influenced by the location, cultivation, and fertilizer application, so far as their degree of secondary salinization is concerned. Soils farther from irrigation channels and population centers are less mature and more severely salinized. For the purpose of interpreting the degree of salinization, the authors suggest the following indices: (1) When the average saline content of the 0-20cm layer is less than 0.2 percent, the soil is not salinized, the fields are clearly visible and there are no white or gray salt spots; (2) When it is 0.2-0.5 percent, only large fields are visible and salt spots cover about 10-15 percent of the area; (3) When it is 0.5-1.0 percent, only about half of the fields are visible and salt spots cover about 20-30 percent; (4) When it is 1-2 percent,

[continuation of TURANG TONGBAO No 4, 81 pp 19-21]

most of the fields cannot be distinguished from one another, salt spots may cover 50 percent of the area, and the soil is so severely salinized that only small areas are cropped. The composition of the salts may also be directly or indirectly observed on the photogammetric mosaics. For example, $NaCl_1$, $MgCl_2$, $CaCl_2$ are very soluble and they cause the ground surface to be damp and in a dark gray color. The white colored spots are mainly Na_2SO_4, which forms a hard crust on the gound surface and is highly light reflective. Aerial photos are reproduced to illustrate soils of various degrees and types of salinization.

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TITLE: "Trend of Nitrogen Mineralization of Major Cultivated Soils in Shaanxi Province"

SOURCE: Shenyang TURANG TONGBAO [JOURNAL OF SOIL SCIENCE] in Chinese No 4, 5 Aug 81 pp 26-29

ABSTRACT: In 1972, Stanford and Smith (S.S.S.A.P. Vol 36 pp 465-472) proposed the concept of soil nitrogen mineralization tendency. Since then, numerous studies by these and other scientists have proved that soil nitrogen mineralization (No) may be used as an index to assess soil nitrogen fertility. Samples of 20 types of cultivated soils of Shaanxi Province are tested with the Stanford and Smith technique to determine the quantity of nitrogen produced from mineralization periods of 2, 4, 7, 10, 14 cycles. The No values of these samples thus obtained are reported. For the purpose of further clarifying the soil nitrogen mineralization process, its nitrogen supply characteristic, and the effect of different thermal and water conditions on the mineralization speed constant, further study is planned.

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TITLE: "Effects of Accumulative Application of Organic and Inorganic Fertilizers on the Fertility of a Waterlogged Paddy Soil"

SOURCE: Shenyang TURANG TONGBAO [JOURNAL OF SOIL SCIENCE] in Chinese No 4, 5 Aug 81 pp 30-32

ABSTRACT: Different fertilizer application measures, including no fertilizer, all chemical fertilizers, organic fertilizer (green manure and pig manure) alone, and mixture of organic and inorganic fertilizer, are used in a 3-year continuous experiment to determine the effects on the yield of Qingzini soil, a waterlogged paddy soil typical of the Qingpu County Institute of Agricultural Sciences Farm. The section of mixed application of organic and inorganic fertilizer produced the highest yield in all seasons except for the first season when the yield was slightly lower than the section of chemical fertilizer application. The nitrogen absorption and the nitrogen utilization rate of 4 rice growing seasons in 1978-80 of the different sections of different fertilizer application measures are reported and analyzed.

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TITLE: "A Study of the Effect of the W-Type Manuring Process on Improving the Productivity of the Rice Plant"

SOURCE: Shenyang TURANG TONGBAO [JOURNAL OF SOIL SCIENCE] in Chinese No 4, 5 Aug 81 pp 33-34

ABSTRACT: This paper reports experiments carried out in 1975-77 to compare effects of V, Λ, and W types of fertilizing process on the growth and yield of paddy rice. The V type emphasizes basic fertilizer to promote tillering and nitrogen is withheld in the middle stage of growth and lightly applied in the late stage. This has been the adopted method since the late 50's. The Λ type deemphasizes the initial application and applies heavily to promote growth of the middle stages; experimental yield increase results have been reported in recent years. The W type narrows the difference of the quantity of fertilizer applied in the 3 or 4 stages. The success in producing nodular chemical fertilizer for deep layer application in the 70's has made the W type feasible. Compared with fast acting liquid nitrogen, as demonstrated in 13 experiments, the nodular fertilizer produced a yield increase of 11.7 percent, yet there was also an accompanying increase of 15.4 percent of straw. Nodular fertilizer has, therefore, made the shortcomings of the V type even more obvious. Experimental results supporting the superiority of the W type are detailed.

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2 December 1981

China Report

AGRICULTURE

No. 176

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2 December 1981

CHINA REPORT

AGRICULTURE

No. 176

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

Industrial Crop Harvests Increase Nationwide
(XINHUA, 19 Nov 81)..... 1

Agricultural Responsibility Systems Viewed
(Liu Shumao; JINGJI GUANLI, 15 Sep 81)..... 3

Deputy Director of State Agricultural Commission Discusses Agricultural Economics
(He Kang; NONGYE JINGJI WENTI, 23 Oct 81).....9

Forestry Vice Minister Urges Afforestation of Plains Areas
(Hao Yushan; ZHONGGUO LINYE, Sep 81)..... 14

Possibility of Organic Dry Farming in North China Explored
(Zhang Qinwen; NONGCUN GONGZUO TONGXUN, 5 Oct 81)..... 18

Du Ziduan on Importance of Rural Enterprises
(XINHUA, 18 Nov 81)..... 23

Advanced Rural Production Brigades Urged To Aid Backward Units
(NONGCUN GONGZUO TONGXU, 5 Oct 81)..... 25

Impetus Given To Improved Management of Water Conservancy Projects
(NONGCUN GONGZUO TONGXUN, 5 Sep 81)..... 29

Effects of Shading During Different Stages of Growth on Rice Yields
(Mao Bijun, et al.; GUONGDONG NONGYE KEXUE, 8 Sep 81)..... 33

Further Development Urged in Fish Culture
(NONGCUN GONGZUO TONGXUN, Aug 81)..... 36

Mountains Designated To Meet Personal Needs
(Shen Yuandi; XINHUA Domestic Service, 13 Nov 81)..... 40

Briefs
Mu Us Desert Transformation 42

Anhui

Briefs
Suxian Prefecture Harvest 43
Industrial Crops 43

Beijing

Briefs
Agricultural Products Procurement 44

Fujian

Briefs
Tea Procurement 45
Datian County Grain Harvest 45

Guangdong

Factors To Be Considered in Undertaking Major Improvements of Fields Explained
(Huang Shengchi; GUANGDONG NONGYE KEXUE, 8 Sep 81)..... 46

Briefs
Fixed Assets Check 50
Production Resumed 50

Guangxi

Briefs
Autumn Harvest 51

Guizhou

Briefs
Late Autumn Farming 52

Hebei

Campaign Against Rodents Urged
(HEBEI RIBAO, 21 Sep 81)..... 53

Increase in Numbers of Rodents, by Dong Guiti, Zhang Shujian
'RIBAO' Commentary

Pointers Given for Sowing Wheat in Dry Conditions
(HEBEI RIBAO, 2 Oct 81)..... 55

Briefs
Tangshan Underground Water 57

Heilongjiang

Wang Luming Reports on Disaster-Relief Work
(Heilongjiang Provincial Service, 18 Nov 81)..... 58

Briefs
Flue-Cured Tobacco 59
Soybean Production 59
Food Processing 59
Afforestation Projects 59
Sugar Mill Operation 59
Dairy Output 60

Henan

Briefs
Wheat Sowing 61
Foodstuff Industry Forum 61

Hubei

Bumper Harvest Encourages Expanded Rape Crop
(HUBEI RIBAO, 28 Sep 81)..... 62

Briefs
Male-Sterile Hybrid Rice 63

Hunan

Briefs
Industrial Crops 64
Late Rice Reaping 64
Household Incomes 64

Jiangsu

Briefs

Corn Harvest 65
Cotton Purchase 65
Agricultural Production 65
Jiangsu County Harvests 65
Jiangsu Peanut Procurement 65

Jiangxi

Briefs

Minor Autumn Harvest 66
Jiangxi County Cotton Output 66

Jilin

Briefs

Diversified Economy 67
Agricultural Production 67
Rice Institute 67

Liaoning

Commentary Urges Farmland Protection
(Liaoning Provincial Service, 15 Nov 81)..... 68

Guo Feng Reports on Thriving Rural Situation
(Kong Qingju, Meng Xianjun; XINHUA Domestic Service,
15 Nov 81)..... 70

Briefs

Fire Prevention 72
Bumper Harvest 72

Nei Monggol

Briefs

Soybean Output 73
Buckwheat Output 73
Togtoh County Grain Harvest 73
Egg Procurement 73
Bayannur Gain Harvest 73
Ulanqab Grain Procurement 73

Shandong

Briefs

Wheat Sowing 74
Cotton Procurement 74
Tobacco Production 74
Livestock Breeding 74

Shanxi

New Wheat Variety Being Promoted
(SHANXI RIBAO, 25 Sep 81)..... 75

Sichuan

Briefs
Bumper Harvest 76

Zhejiang

Briefs
Jinhua Prefecture Cotton Harvest 77

ABSTRACTS

AGRICULTURAL SCIENCE

SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY], No 5, 5 Oct 81..... 79

METEOROLOGY

QIXIANG [METEOROLOGICAL MONTHLY, No 10, 10 Oct 81..... 81

VETERINARY SCIENCE

SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY], No 9, 20 Sep 81..... 82

I. GENERAL INFORMATION

INDUSTRIAL CROP HARVESTS INCREASE NATIONWIDE

OW191220 Beijing XINHUA in English 1204 GMT 19 Nov 81

[Text] Beijing, November 19 (XINHUA)--Harvests of major industrial crops including sugar cane, sugar beet, tobacco and soy beans have increased in many parts of China this year to either two-year or all-time highs, according to reports from various provincial agricultural departments received here.

Peasants in Guangdong Province, one of China's leading sugar-cane producers, expect to reap 11.6 million tons of cane this year, 30 percent more than last and a new record. The harvest is on 216,000 hectares, 46,000 more than last year. To deal with the increased output, the province has added 26 workshops with an aggregate refining capacity of 10,000 tons.

In sub-tropical Guangxi, another of China's leading cane sugar producers, it is estimated four million tons of cane will be harvested on its 113,000 hectares. The annual refining season has started, with an expected sugar output of 500,000 tons, a 20 percent increase over the previous refining season.

Following a record harvest of 3.2 million tons of sugar beet in China's northern-most province of Heilongjiang, top sugar beet producer, and a good harvest in Inner Mongolia earlier this month, the Ningxia Hui Autonomous Region has reported gathering 90,000 tons of sugar beet, 34.3 percent more than in 1980. The region's refining capacity grew from 500 tons per day to 700 tons.

Henan Province, the nation's leading tobacco and second largest soy bean producer, grew 153,000 hectares of tobacco this year, 64 percent more than last. Supply and marketing cooperatives in the province had already purchased 340,000 tons, 80 percent more than in 1980.

By late October, China's other major tobacco growing provinces of Shandong, Guizhou and Hunan already reported record output surpassing the previous year by 30, 40 and 80 percent respectively.

Meanwhile, Henan's soy bean output was a record 1.32 million tons, despite a drought in two of 10 producing areas. The output, on 1.13 million hectares, is 44 percent greater than last year's. The province is China's second biggest soy bean producer next only to Heilongjiang.

In Heilongjiang, the Songnen plain between Songhua and Nenjiang rivers, which accounts for half of the province's soy bean land, reaped 1.25 million tons this year, outstripping last year by 20 percent. As a result of raising the purchasing price for soy beans by the state, the local communes has extended the hectarage by 11 percent. They have improved the cultivation method, selected good seeds and applied more manure as fertilizer. In some localities new techniques of weeding and spraying of chemical fertilizer have been adopted.

CSO: 4020/29

AGRICULTURAL RESPONSIBILITY SYSTEMS VIEWED

HK050700 Beijing JINGJI GUANLI in Chinese No 9, 15 Sep 81 pp 12-14

[Article by Liu Shumao [0491 4872 5399]: "A Brief Introduction of Some Principal Systems of Production Responsibility Now Practiced in China's Rural Areas]

[Text] In China's agricultural collective economic administration and management, how to mobilize the enthusiasm of the commune members and how to bring about the superiority of the collective economy are problems that have remained unsolved for a long time. Since the 3d plenary session of the 11th CCP Central Committee, along with the implementation of the rural economic policies and in proceeding from actual conditions, the vast numbers of cadres and commune members have liberated their thinking, boldly explored and established various forms of the agricultural production responsibility system in light of different levels of production, of management and of consciousness of the masses of the commune members. They have broken down the restrictions of tolerating only one formula for collective economic management and have basically overcome the drawbacks of eating "from the same big pot" and "doing things in a massive and unplanned way" in production, thus arousing the enthusiasm of the commune members for production and achieving remarkable results.

Up to now, more than 90 percent of the production teams in the rural areas throughout the country have introduced one after another different forms of new production responsibility systems. Generally, the production teams which practice the responsibility system of contracting a job to be done in a certain period of time with remuneration according to quotas are becoming fewer and fewer while those following the system of remuneration according to output are increasing in number. Of the systems in which remuneration is according to output, those fixing output quotas for each special line of production, fixing output quotas for every able-bodied laborer, fixing output quotas for individual households, and the system of peasant households assuming full responsibility for task completion and others are on the rise while the system of fixing output quotas based on a group is decreasing.

The System of Fixing Output Quotas for Each Special Line of Production With Remuneration According to Output

The system of fixing output quotas for each special line of production with remuneration according to output is also called "four specialities and one link," that is, in light of the local natural resources, labor resources and the conditions of technology and the development of production, and in accordance with the principle of unified administration under the teams and of sharing out the work and cooperating with one another, the production teams assign the production targets of agriculture,

forestry, animal husbandry, sideline production, fishery, industry and commerce to specialized teams, specialized groups, specialized peasant households and specialized laborers under a contract system by linking remuneration with output according to the local conditions. The basic characteristic of this system is to contract production targets in different trades in accordance with the principle of specialization and division of production and with the special skills of the laborers. A laborer who is expert in agriculture can get a contract on farmland according to his ability; he who is skilled in various trades and professions of forestry, animal husbandry, sideline production, fishery, industry and commerce can contract production targets in various trades according to his special skills and ability. Thus everyone can do his best in his work and be responsible for his own job. Whether the various operations in process of production are to be carried out in a centralized or decentralized way depends on the situation. The fixed quota production under a contract will go to the unified administration. When production is in excess of or below the output quotas the contractors are rewarded or penalized. The various economic targets contracted between the production teams and the contractors should be in a contract which should not be changed for a year or several years.

This kind of production responsibility system can both give scope to the advantages of the unified administration of the collective economy and satisfy the demands of the commune members for linking remuneration with output and for practicing the principle of more pay for more work. The implementation of this system in the economically developed regions will be conducive to the improvement of labor productivity and commodity rate of products and to the further development of the diversified economy, thus enabling the agricultural collective economy to advance toward specialization and socialization step by step.

The System of Fixing Output Quotas for Every Able-bodied Laborer with Remuneration According to Output Under the Unified Administration of the Production Teams

The main outstanding feature of the system of fixing output quotas for every able-bodied laborer with remuneration according to output under the unified administration of the production teams is that plots of land are contracted out according to the labor force and farm work is done in both a centralized and decentralized way. The main characteristic of this responsibility system is that on the condition of upholding the "three no-changes," the production teams assign the "four unifications" and "five fixed awards with rewards and penalties" to each able-bodied laborer. What is meant by the "three no-changes" is that no changes should be made in the collective ownership of the means of production, in the principle of to each according to his work and in the production teams still being the basic accounting unit. The "four unifications" refers to the unified plans for planting, unified administration in using the collective draught animals and large and medium-scale farm machinery and implements, unified management of water and efforts to combat natural disaster and unified accounting and distribution.

The five "fixes with rewards or penalities" means a fixed labor, land, costs, output, renumeration with rewards for exceeding the quotas and penalties for failing to fulfill them. In carrying out this responsibility, according to the principle of adapting measures to local conditions and the wishes of the masses, the following systems can separately be exercised, such as the system of fixing output quotas in all crops for individual able-bodied laborers or the system of fixing output quotas for a single crop for individual able-bodied laborers or the system of directly fixing

output quotas for individual able-bodied laborers or the system of fixing output quotas first for a group and then for individual able-bodied laborers.

The system of fixing output quotas for individual able-bodied laborers is adaptable in fairly vast circumstances. Ordinary production teams can follow it, and after their diversified economy has developed and their production projects have increased in variety, they can advance to the system of fixing output quotas for each special line of production. While introducing the system of fixing output quotas for individual able-bodied laborers in farm production, it is necessary to diversify the economy in forestry, animal husbandry, sideline production industry and commerce in ways suited to local conditions and establish the corresponding responsibility systems according to actual conditions. Those production teams which are able to carry out the system of fixing output quotas for each special line of production can practice it; those unable to do so can introduce the system of fixing output quotas for a mixed line of production, or the system in which output quotas (or output value), income, costs, profits, payment and rewards or penalties are fixed and the income is shared proportionately, or the system of handing over the [assigned] profits to higher authorities under a contract or handing over the money for workpoints.

The System of Fixing Output Quotas Based on Households

Under the prerequisite of unified leadership, unified planning, unified accounting and unified distribution under the production teams, the system of fixing output quotas based on individual households is an agricultural production responsibility system which assigns the greater part or the whole cultivated farmland to peasant households and in which production is carried out basically by individual peasant households in accordance with the method of fixing output quotas, investment and workpoints with a reward for those over fulfilling the output quotas and a penalty for those failing to fulfill theoutput quotas under a contract. The contracts for collective cultivated farmland are decided by the commune members through democratic discussions. The plots of land are divided according to the method of a combination of family members and able-bodied laborers or according to the number of members of a family. As commune members, the cadres of the production teams similarly can contract for the land. In order to encourage family planning, more plots of land can be contracted to commune members with an "only one child certificate." Whether or not the production brigades' cadres, the locally run schools' teachers, barefoot doctors, casual laborers, contract workers and the commune and brigade-run enterprises' personnel should contract for the land and how many plots of land they should contract for should be decided by the commune members through discussions. In dividing the cultivated farmland to be contracted, it is necessary to first fix the output quotas of the land before they are assigned to the various peasant households under a contract, so as to make sure that the contracts will promote production. In fixing the plots of land to be under contract, it is necessary to pay close attention to such factors as villages and river systems--the closer, the better. The quality of the soil should be taken into consideration and yields adjusted accordingly. In order to maintain the continuity of production and to benefit soil fertility, the contract period of the land should be comparatively stable and remain unchanged for a certain period of time. The commune members have the right to only use the land which they contract; they are prohibited from buying or selling it. Collective-owned draught animals can be assigned to fixed peasant households at unified price to ensure both the capital and its value and can also be turned over to the peasant households after the price is fixed and the money for the pur-

chased draught animals is collected in installments and put into the accumulated funds of the collective, or the production teams can especially assign persons to manage and use the draught animals, thus exercising unified farming. The production teams can also assign specialized individuals to manage and use the large and medium-scale farm machinery and implements or assign them to specialized individuals under a contract.

The regions which have been for a long time in a state of poverty and backwardness and where the masses have demanded the adoption of the system of fixing output quotas based on individual households have followed this production responsibility system, thus resulting in a noticeable increase both in production and income.

Quite a few regions which adopted the system of fixing output quotas based on individual households and the system of peasant households assuming full responsibility for task completion have very quickly solved the question of having enough to eat and wear. After gradually acquiring surplus money, they have jointly raised funds on their own accord to start new production projects and moved on to a new economic integration.

The System of Peasant Households Assuming Full Responsibility for Task Completion

The system of peasant households assuming full responsibility for task completion is an agricultural production responsibility system in which the production teams assign the cultivated farmland to peasant households for farming under a contract and assign the draught animals and farm implements to the fixed peasant households for their management and use and practice management by individual peasant households. The basic characteristic of this system is that after the state and the collective deduct a percentage of output originally agreed upon, the surplus products go to the individual. In the term of the masses, that is "to hand over the fixed amount of output originally agreed upon to the state and the collective to the full and retain whatever surplus there might be." Compared with the system of fixing output quotas based on individual households, this form gives the commune members more direct economic benefits. In introducing this responsibility system, the production teams generally formulate the plans for planting the major crops in a unified way. The large and medium-scale farm machinery and water conservancy facilities are generally put under the unified management and use of the teams. The industrial and sideline production suitable for the collective management are put under the unified administration of the teams. The production teams should in general divide the goods for farm use which are supplied to them by the state among the peasant households who then will buy and use the goods. The concrete way to contract out the land, draught animals and farm implements are basically identical with those of the system of fixing output based on individual households. In addition, apart from fulfilling the various output quotas to be handed over to higher authorities, the various peasant households under a contract must carry out a certain amount of compulsory service, service in farmland capital construction and other necessary collective work. Generally speaking, the compulsory service should be alloted according to labor force. The service in farmland capital construction should be divided in accordance with the acreage of cultivated land under contract or in accordance with the labor force. It is necessary to give favored threatment to the martyrs' and armymen's families and disabled armymen according to the stipulations of state policy. Supplies for the households enjoying the five guarantees should be ensured in accordance with the living standard of ordinary commune members. In making arrangements, appropriate preferential treatment should be given to families with material difficulties.

The System of Fixing Output Quotas Based on Groups with Remuneration According to Output

The system of fixing output quotas based on groups with remuneration according to output is also called "the system of guaranteeing output, workpoints and production costs, with a part of extra output as reward" or "five fixed with a reward." Under the prerequisite of unified leadership, planning, accounting and distribution under the production teams and in light of the needs of production, the production teams are divided into several working units. They will separately undertake field work under a contract. The production teams fix the output quotas (or output value), workpoints and production costs for the working units under a contract. The fixed quotas portion under a contract is put under unified distribution and the portion in excess of output quotas is turned over to the contractors as reward: the contractors who fail to fulfill the output quotas will be penalized.

Most of the production teams which are relatively large adopt this responsibility system. Because the work forces are organized into smaller groups, the quality of production can be watched more closely. This helps the commune members to concentrate on collective production and also helps launch competition among the working units to increase production and boost income. The shortcomings are that if no earnest attempt is made to record workpoints according to fixed quotas, egalitarianism will still emerge among the working units, thus turning the "same big pot" into the "same big sub-pot" and the practice of "doing things in a massive and unplanned way" into that of "doing things in a small and unplanned way." The responsibility and interests of this system are not so direct as those of the other forms of the system of assigning responsibility with remuneration according output.

The System of Contracting Out a Job to be Done in a Certain Period of Time with Remuneration According to Quotas

The system of contracting out a job for a certain period of time (or certain seasons) with remuneration according to quotas is a production responsibility system which fixes only the jobs but not output quotas for the contractors by linking remuneration with the quality of labor.

It works on the basis of having worked out the farm production quotas and in accordance with the requirements of production plans, the production teams assign part of the operation or the tasks of some operational items to groups, individual able-bodied laborers and peasant households under a contract by fixing the number of laborers, quantity, quality, time limits and workpoints. After the fixed output quotas are fulfilled on time, the production teams must check and accept the fulfilled output quotas. Those which are qualitatively acceptable will earn the workpoints originally agreed upon, and those which are not qualitatively acceptable must be made up a new or a corresponding reduction in workpoints will be made. Some regions contract out the continuous operation of the whole field management by linking reward and penalty with output.

After the cooperative transformation of agriculture, many units which had been run comparatively well adopted the system of contracting out a job to be done in a certain period of time with remuneration according to quotas. Provided the norms of labor and the standards of quality are rationally fixed and the fulfilled tasks are checked and accepted strictly in accordance with the requirements of quality,

this system is fairly effective in overcoming egalitarianism and promoting agricultural production. But this system must be further improved so as to make its responsibility more definite and linked more closely with the economic interests of the laborers.

The above-mentioned systems are some principal systems of production responsibility now practiced in China's rural areas. Along with the establishment of these responsibility systems, the masses have demanded the establishment of responsibility systems among the cadres in charge of production, the technical departments which give directions to production and their personnel. At present, many regions are practicing the job responsibility system with definite duties by linking reward and penalty with workpoints and with the fulfillment of major economic targets through assessment. The method of using popular technical measures to get practical results is practiced among the technology popularization departments and their personnel by signing contracts which stipulate the rights and obligations and conditions for reward and penalty between the technology popularization departments and the producers.

The units introducing the various forms of production responsibility systems generally sign economic contracts, thus making the responsibility systems more practicable and enabling both parties "to be reassured." These contracts have legal effect. Both parties have to carry them out accordingly. Where special conditions (such as natural disasters) are encountered, the demand of any party to revise the contracts will be fulfilled after consultation and agreement between the two parties.

Ours is a vast country. The conditions in various fields vary greatly. In establishing the production responsibility systems in various localities, communes, brigades and teams, we must proceed from the actual level of the development of production, from the wishes of the majority of the masses and from the different natural conditions and different characteristics of production to make an appropriate choice suited to the local conditions. We must not "find a single solution for diverse problems" and not carry out a single pattern by fast and rigid regulations. The emergence of the various production responsibility systems means China's socialist collective economic management has entered a new stage. Along with the further development of production, new conditions and new problems will surely arise demanding our prompt study and solution for the continuous perfection of China's agricultural production responsibility systems.

CSO: 4007/91

DEPUTY DIRECTOR OF STATE AGRICULTURAL COMMISSION DISCUSSES AGRICULTURAL ECONOMICS

Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese No 10, 23 Oct 81 pp 7-9

[Article by He Kang 0149 1660]: "Step Up Research in Agricultural Economics and Training of Agro-Economists"]

[Text] Chairman Mao pointed out very early that the economy consitutes the foundation and politics is a concentrated manifestation of the economy. Policies, plans, systems, and prices etc. must all have economics as their foundation if they are to be accurately formulated. If we want to make production relations commensurate with productivity, we must study production relationships and productivity. However, under the many years influence of "leftist" ideology, agricultural economics was brought to ruin. If one were to say that agriculture was the hardest hit household in a hard hit disaster area, then agricultural economics was the hardest hit spot in the hardest hit household. During the "Great Cultural Revolution," of the 32 institutes in the Chinese Academy of Sciences, only the Institute of Atomic Energy was kept and only the Institute of Agricultural Economics was eliminated. The other institutes were transferred to a lower level. But the Institute of Agricultural Economics did not even have sufficient status to be reduced to a lower level. For many years we have prattled about politics, paying no attention to economics. And even when we talked about agricultural science, technology was emphasized and economics slighted, production emphasized and management slighted. As a result, many of our policies have lacked scientific data accumulated over a long period of time. Take prices, for instance. This is a very large problem. But how are prices arrived at? One minute someone says that unless prices go up people won't grow soybeans, and so someone is sent out to investigate and write a flock of reports. Prices rise 20 fen. But after a little while, someone says this will not do either. One problem is solved only to have another crop us. This is no way to do things. This method does not establish long term study of productive labor and the laws of value to accumulate a data base; therefore, this kind of work should be effectively strengthened. Moreover, we feel that numerous problems have to be studied comprehensively, and numerous technical measures have to be reflected in economic results. Economic brains are needed in every undertaking. Even in science and technology, economic brains are needed. Nowadays many people who study agriculture feel the study of economics is essential, and that without it a production structure for large scale agriculture and strategic planning cannot succeed. In order to intensify research in agricultural economics, experts in agricultural economics will have to participate in and make recommendations about the major decisions pertaining to national agricultural

development strategy. On the one hand, our work has to be integrated, and on the other leaders have to create conditions whereby everyone can understand circumstances, and they have to organize and investigate. In some future major agricultural decisions, everybody's advice should be sought on aspects relating to agricultural economics.

Two points are to be made in this regard. The first point is enhancement of investigation and research work on agricultural economics. State Agricultural Commission leaders give fairly heavy attention to this matter, and we want to propose topics for organization in this regard, be given necessary funds, and be given support in all ways. This work requires, first of all, fixed site surveys to look into some fundamental situations in agriculture, and long term, systematic accumulation of data to put into computers in the future for use as data in the formulation of policies. We would like to use 50 counties as base points. At the present time, the State Planning Commission and the State Statistical Bureau are already operating many points, each of them separately operating investigation sites on the basis of their own individual needs. We think that first a look should be taken at where the needs are greatest, after which everyone is organized for a common effort. More important is that a large amount of data has been worked up, but this data has not been well analyzed or applied. The main problems are these. The need to organize forces to propose topics and make good use of these materials, I regard as a priority problem. After returning, we can study to find relevent units to do this work. Second is the need to do specialized surveys. I feel that the six proposals that have been put forward have been worked up well. I have looked at several of the materials, and those special surveys on the structure of agricultural production, costs of production and prices of agricultural products, based as they are on the actual situation in 11 counties, are rather good. At the same time, it seems not enough analytical study has been done. The data from these 11 counties is fairly abundant, yet no complete analysis has been done. Therefore, specialized investigation and research on these several aspects has to be continued. For example, in the investigation of the structure of agricultural production, one aspect is qualitative. Each county has an urgent need about whether cotton should be paramount or whether something else should be paramount. Take the case of Liaocheng in Shandong Province, for example. Here the state requirement is not for commodity grain but for cotton, so grain fields to provide grain for local consumption are the only grain fields planted. Last year when I visited Liaocheng, I had a discussion with leading comrades in the Prefecture CCP Committee as to whether consumption grain fields could be contracted out for grain production, grainfields and cotton fields being of equal number in a shouldering of both cotton and grain production with the initiative being derogated to the peasants. Some of the money earned from the growing of cotton could be applied to the grain fields. As per unit grain yields increased, some of the grain fields could then be devoted to the growing of cotton, and when a lot of grain became available in the markets in the future, it could be bought, and even more of the grainfields could be devoted to the growing of cotton. This is operation of the laws of value. Another aspect is quantative, i.e., proportions within agriculture with future internal agricultural proportions being set according to resources and zoning. Another aspect is the production structure; still another is the crop pattern; and still another is the system of farming. All must be planned out macrocosmically at first, varieties, fertilization ecc. being able to play a role only later on. In places not suitable for the growing of cotton, it would be a mistake to plant cotton, and twice the work for half the benefit would be required in the control of insects and in further spreading of fertilizer. Only by first solving macrocosmic problems

can full benefits be derived later on in the microcosmic economy. Therefore, these problems must be well studied. For example, recently Comrade Yao Ban [5069 6721] proposed, on the issue of relationships among the state, the collective and individuals, solution to the problem of lightening the peasants' load. Right now peasants have numerous burdens, and these problems should be studied and solved. So, these problems have to be continued to be worked at, and we will organize later on to give attention to specific points of importance. The system of responsibility for production is a large topic, and a major point in the future. We must study this topic well. For example, how, in view of the characteristics of China's agriculture, to make the system of responsibility work and scientific management work. Recently we had a team visit the United States to observe the agricultural economy, their observations centering on family farms. American agricultural production is very modernized, but its dominant structure is the family farm with 1.5 workers per farm. There are somewhat more than 3.7 million farm workers in the country on somewhat more than 2.3 million farms, each farm averaging 2,600 mu of land. Why is there such a high degree of mechanization? In America today, the farms are either very large or very small; medium size ones are not numerous. Furthermore, a single person can raise more than 100,000 chickens, and this is also a man and wife business. But the feed company provides them with chicks, feed, and innoculations. Within 2 months, or about 56 days, they grow to maturity for eating and are hauled away as a group to be slaughtered, and a new batch of chicken is supplied the farmer for raising. The United States has family farms under socialized conditions, while China has large scale contracting of work under unified leadership, which is able to tap the enthusiasm of both the collective and individuals. Naturally, the two social systems are fundamentally different. There are many lessons to be learned in this, and henceforth there is a need for intensified study of the system of responsibilty and scientific management.

Below are listed several topics for study.

First, the need to intensify economic study of agricultural resources, things like economic problems in aquatic resources, and rural energy problems. Rural energy sources are of eight kinds: firewood forests, methane gas, small hydropower stations, small coal mines, wind power, solar energy, the tides, and geothermal energy. In the many regions of the country, what are the economic benefits of these for each region? This poses many problems requiring study.

Second, regional economic research. China has some key development areas, and it also has some key regions to bring under control. Some of these are problems in comprehensive development of drought, waterlogged, and saline-alkaline areas in the Huang, Huai, and Hai river areas, conservation of water and soil in the loess highlands, development of the Sanjiang Plain, development of mountain regions in the south, etc.

Third, the technological economy, particularly the economic benefits of investment. Just where should the focus of our future investment be? The economic benefits deriving from various technological measures such as chemical fertilizer, water conservancy, mechanization, etc. all require study.

Fourth is study of the economy of private retention. This means study of private plots, private mountains, people engaged in private pursuits, and household sideline occupations. One of the main reasons for the liveliness of agriculture in Hungary

is that the economy of private retention is fairly well developed. Its economy of private retention covers 10 percent of the cultivated land and accounts for one-third of all agricultural products, and 44 percent of the output value of agriculture. Benefits from private plots is great. Output from private plots in China is double or several times that from large fields, and there are cases in which people earn as much as 1,000 yuan from a private plot. Therefore, the economy of private retention merits study. Study of the private retention sector of Hungary's agricultural economy is one of the key points for study. A private retention economy has been organized, but China has processing, state provided technicians, specialized farm fairs, and a collection of facilities that can be a needed supplemental part of the socialist economy, and should not be allowed to be dissipated. Recent data show that the volume of trade done in China's agricultural fairs during 1980 was 2.3 billion yuan, almost double the 1.2 billion yuan of 1979. Of the total, 66 percent was from dealings in chickens, ducks, fish, pork, and vegetables. The rural economy was enlivened and skilled craftsmen emerged.

Fifth, a series of economic problems in commune and brigade enterprises, rural industrial sideline occupation production, construction of medium size and small cities and towns, and the equipping of large, medium, and small enterprises require study.

Sixth, how best to solve problems under present circumstances in agriculture, industry, and commerce, particularly as to the area of circulation of products and development of a commodity economy requires study.

Seventh is the problem of rural finance and banking, which is an important one. In the capitalist world, in any given year the amount of credit is about equal to output value. In the United States during the past several years, farm credit has amounted to more than 100 billion annually, 20 percent of its federal or state, and the remainder being private. In China, however, farm credit in any given year amounts to 10 percent of the output value of agriculture. Rural credit must be handled well. In future, some of China's capital construction expenses for agriculture and for public utilities can be financed through credit, for a steady turnover. There is need, as well, to study world finance and how to use in agriculture foreign capital provided under preferential conditions. There is something to be learned here too. We have to study World Bank and United Nations agricultural development fund credit methods.

Eighth is pertinent economic research and forecasting in the sphere of strategy for agricultural development, including forecasts for development in the year 2000 as well as forecasts of current year outputs. Comrade Weng Yongxi [5040 3047 2569] and comrades in the Chinese Academy of Sciences used regression formulas in computers to make some output forecasts for 1981, which were provided to leaders for their reference, and which have been very helpful.

Ninth is economic questions about agricultural products trade, such as how many dollars will have to be spent in a year for the importation of so much grain and cotton. Similarly, when we export farm products, there is a need to know that a great amount of rapeseed oil is in storage containing ericic acid. It will be difficult to export and the people do not like to eat it. Now a means will have to be found to substitute rapeseed oil for peanut and soy oil, so these oils may be exported. Currently more than 8 million tons of chemical fertilizer are imported. What should the ratios of nitrogenous, phosphate, and potassium types be? Phosphate and potassium

fertilizer have to be imported, but is it better to import phosphate fertilizer or is it better to import phosphoric acid to make the phosphate fertilizer ourselves. China's markets are not isolated, but must be thought of in terms of markets throughout the world. Right now wheat is one of China's major imports, but the price of what has more than doubled during the past 20 years, going from several tens of dollars to $170 or $180. The price of corn has not gone up as much, less than double. The price of rice is almost double that of wheat, therefore adjustments have to be made in the varieties of grain imported and exported. There is also need to study how to expand exports of farm products, particularly of labor-intensive products.

Tenth is problems in the foreign farm economy. What experience have foreign countries had in the history of the development of agriculture that are worth borrowing.

Finally is stepping up the training of talent. Management is also a science. At the present time, administrators and managers in agriculture seem to be in short supply. In China, the proportions between industry and agriculture are out of balance. And in the training of agricultural talent, there is also a problem of proportional imbalance. Talent to conduct farm technology is, of course, insufficient; however the ratio is still fairly great while those able to manage the agricultural economy are few. Yesterday I went to have a chat with comrades in educational institutions and learned that there are slightly more than 20 institutions in the country that have special courses in agricultural economics. Right now there are more than 80,000 students enrolled in agricultural institutions of higher learning, but the number studying agricultural economics is probably less than 2,500. However, China now has more than 50,000 communes, 700,000 production brigades, and more than 2,300 counties and municipalities. Following reform of the Guanghan system in Sichuan Province, the director of the county rural work department went to the grassroots level as a manager of integrated agricultural, industrial, and commercial enterprises. He spoke animatedly about how to run this and how to do that. This manager really knew how to balance the books. At all the communes in which he served, output value from industry alone amounted to 18 million yuan. More than 10 industrial plants large and small and a lot of administration and management brains. By training a group of high level agricultural administrators and managers of this kind, the numbers would be very big, so this aspect needs strengthening. Furthermore, I am afraid that our courses in agricultural economics need revision. Formerly we followed the Soviet model, but many changes have taken place in our policies. Not enough is taught about this, and changes have already taken place in that, and there are new technologies too. We do not do enough teaching of computer technology or of linear programming and such new technologies. Therefore, there is a matter of reform in our specialized courses in agricultural economics as well. This problem is primarily the responsibility of leaders who should help educational institutions do this work. Right now a special meeting on agricultural economics is being held at Lushan; we shall see how this problem is solved after the meeting. In addition, I hope to be able to run some short training classes, lasting half a year or a year, for the training of personnel acting as managers. They should be the first group to be trained. Later on, this can be stepped up and there can be academic exhcnages with foreign countries to get things that benefit us.

(The third portion of a speech delivered by State Agricultural Commission deputy director, Comrade He Kang before the National Agriclutural Economics Problem Discussion Conference.)

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FORESTRY VICE MINISTER URGES AFFORESTATION OF PLAINS AREAS

Beijing ZHONGGUO LINYE [FORESTRY IN CHINA] in Chinese No 9, Sep 81 pp 6-8

[Article by Hao Yushan [6787 3768 1472], Vice Minister, Ministry of Forestry: "Survey of Afforestation of the Jiangsu-Shanghai-Shandong-Henan Plain"]

[Excerpts] During the past several years, heartening results have been achieved at various places on the Central Plain of North China combining unified planning of farmland capital construction, agriculture, forestry, and animal husbandry, and comprehensive administration of waters, farmlands, roads and forests in a large scale effort of greening of the plain, farmland forestry networks predominating. According to statistics, the farmland area initially networked with forests in the plains area of the three provinces and one municipality of Jiangsu, Shanghai, Shandong, and Henan amounts to 72.5 million mu, or 40 percent of the total farmland area that can be networked with forests. About 3.2 billion trees have been planted in the four besides [beside rivers, roads, field, and streams], and almost 20 million mu of farmland has been intercropped with tung trees. In some advanced counties that acted quickly and did a good job of tree planting, comprehensive shelter forest systems consisting of a combination of networks, strips, and tracts, in which farmland shelter networks predominate, have already been formed.

1. The Greening of the Plain Is Imperative and Holds Great Potential

Historically it has been the habit in China's plains areas to plant trees in the four besides and to intercrop persimmon, date, and walnut trees on farmland. In the past, large scale planting of trees was also no rarity. Reportedly, in the year that the emperor Yang Di [A.D. 605-617] of the Sui dynasty began the digging of the Grand Canal, he accepted the suggestion of his prime minister and ordered civilian laborers to plant numerous poplars and willows on both banks of the canal. Formerly people always thought that the mountains are for growing trees and farming areas are for growing grain." This was an unalterable principle as a result of which insufficient attention was given the planting of trees and afforestation of farming areas. Consequently the lack of forests and the scarcity of lumber in farming areas has continued to the present day. During the past several years, as a result of their experiences, the masses in farming areas on the broad plains have come to realize the importance of forests, and they have had a taste of afforestation of the plains. In the many places that I surveyed on this trip wherever afforestation of the plain had been done well, agriculture thrived, grain production went up, and the feelings of the masses of the people were settled.

How great is the potential of plains areas? A survey shows that the four besides and odd bits and pieces of land on the plains are equal to about 15 percent of the cultivated land area, and as high as 25 percent in individual places. The area on which trees can be planted amounts to about 10 to 20 percent of the cultivated land area (figuring 200 trees per mu). Even in the water-laced areas south of the Yangtze where land is scant relative to population, as in the 10 counties that comprise Shanghai's suburbs and in the southern part of Jiangsu Province, it amounts to between 7 and 10 percent or so. The vast plain washed by the Yellow River is suitable for intercropping of tung trees on farmland. If three or four trees per mu were planted, the numbers would be quite respectable. From forest reserves can be seen the great potential from afforestation of the plain. Shandong Province's forest reserves amount to 26 million cubic meters, 70 percent of them on the plain. Jiangsu Province's forest reserves amount to 15.12 million cubic meters, 75 percent of them in the four besides. Though great development is now occurring in afforestation of plains everywhere, it is unbalanced. There is unused potential both in places where afforestation is being done rapidly and where it is being done slowly. Places doing it well must continue to fill up the gaps, replace, and upgrade to tap a potential of 10 to 20 percent. In places that are doing it poorly, the potential is 60 percent in some places, and 70 to 80 percent in others. In Henan Province there are 16 million mu of vacant land in the four besides where 1.6 billion trees can be planted, but where only 1 billion have actually been planted. The farmland area that can be networked with forests amounts to 40 million mu of which only 15 million mu has been done. The area that is suitable for intercropping of tung trees amounts to 20 million mu of which only 13 million mu has been intercropped. In addition there is 5 million mu of saline-alkaline land, and 15 million mu of sandy land. In Jiangsu Province, the area of farmland amenable to forest networking is more than 60 million mu, of which somewhat more than 20 million mu has been completed. In Shandong Province, the area available for forest networking is 65 million mu of which 37 million mu has been completed; suitable for the intercropping of tung trees is an area of 18 million mu, 5.5 million mu of which has been so intercropped. Additionally there are 15 million mu of saline-alkaline lands, and 1.2 mu of sandy wastes. In the 10 counties that constitute the Shanghai suburbs, farmland forest networking has been done on only 500,000 of the 5.4 million mu of cultivated land. It may be seen that the potential for planting trees and afforestation on plains areas is very great. By strengthening leadership, giving close attention to the growing of seedlings, relying on policies, depending on science, and relying on the initiative and creativity of the broad masses of the people in a determined effort to make the plains green, results can be obtained within a short period of time.

2. With Afforestation of the Plains, Self-Sufficiency in Lumber Can Be Realized

Afforestation of the plains is the fundamental way to improve the distribution of China's lumber production and arrive at local self-sufficiency in lumber. When the plains are planted to trees, the forests grow fast, the investment is small, there is little expenditure of labor, and benefits are quick. Times till maturity are generally as follows: paulownia: 10 years; poplar: 15 years; metasequoia, pond cypress, larch, Chinese ash, white elm, chinaberry, tree of heaven, bastard acacia [Robinia psudoacacial], and willow: from 20 to 25 years. Measurements made in 1980 at the Zhouzhuang Production Brigade of Jiunu Commune in Chengwu County, Shandong Province showed 0.386 cubic meters of lumber being produced from a single paulownia tree that had been intercropped on farmland for 6 years. With the planting of three trees per mu, the amount of lumber produced would be more than 1 cubic meter.

Jiangsu Province has made some representative surveys as follows: Were every person in each county to plant 50 trees and maintain them to maturity, timber reserves per person might average as much as 0.5 cubic meters, which would be enough to achieve self-sufficiency in lumber. This is also the impression I received from seeing more than 100 communes or production teams that had put lumber self-sufficiency into effect. With a little more effort on the part of every county on the plains, attainment of this standard is possible. The counties I visited in Jiansu, namely Feng and Pei counties; in Shandung, namely Jinxiang, Yanzhou, and Dongming counties, and in Henan, namely Yanling and Xinzheng counties, all of which are advanced forestry counties, had done exactly this. If a county can realize self-sufficiency in lumber, why not a province? Shandong Province has made some fine calculations as follows: The plains area of the province is 70 percent of the total area, and 1,000 rural villages, railroads, watercourses, highways, and dry ditches are more than 50,000 kilometers long. The area on which forest networking of farmland can be put into effect amounts to 65 million mu, and another 18 million mu of cultivated land is suitable for intercropping of tung trees. Were all these areas to be forested, 5 million mu of timber bases built, and timber produced on small tracts of wasteland and in mountain areas, by the end of this century it would be possible for the province to realize self-sufficiency in lumber.

3. Numerous Advantages From Timbering of the Plains

Once forest networking of farmlands has developed, towering, dense forest belts will become a green screen protecting farmland, giving rise to a farmland macroclimate favorable for crop growth, and increasing capabilities to withstand natural disasters. Some people say that forest belts will put a strain on the land and reduce yields, but I do not believe this is so because in every county, every commune, and every brigade on the plains that I visited on this occasion, wherever farmland forest networking had been done well, increases in grain output resulted without exception. I will give just one example here. In 1977, the Wangzhuang Production Brigade in Guyang Commune, Lankao County forest networked all of its 1,150 mu of cultivated land. As a result of the protective function played by the forest network, plus other agricultural measures taken, that production brigade's grain output increased year by year. In 1977, it was 130,000 jin; in 1978, 180,000 jin; in 1979, 250,000 jin; and in 1980, 310,000 jin.

Places that have done a good job of planting trees on the plains annually prune enough branches to solve their fuel problems for 2 or 3 months, and the stalks and stems of plants saved thereby may be returned to the fields for composting into fertilizer to raise the soil's fertility. Furthermore, tree leaves are themselves a very fine source of fertilizer, and when the leaves fall to the ground in the fall, ground fertility increases. In addition, the leaves of certain trees (such as paulownia, bastard locust, poplar, white elm, and Salix sino-purpurea) make good feed for hogs, sheep, and rabbits. They may either be eaten green or sundried and pulverized for great promotion of livestock industry development.

With the planting of trees by villages and the forest networking of farmlands, the natural landscape undergoes change and environmental pollution declines. Everywhere the air is fresh and pure, and the summers are cool and pleasant, creating fine places in which people can rest and work. When people live in a green environment, they are happy and at ease and their physical and mental health improves.

As a result of survey and the acquisition of knowledge, we feel that one major experience in doing a good job of afforesting the plains has been implementation of policies for putting into effect of systems of responsibility for forestry production. I saw on this trip that not only had plains area collective forests developed, but as a result of implementation of policies, the initiative of individual commune members in planting trees was higher than at any time in the past, and the number of trees planted has also been unprecedented. Numerous commune member households have planted trees or have grown seedlings on their private plots. According to a survey, more than 50 percent of the tree planting in the four besides has been done by individual commune members. In Jiangsu Province, 620 million or 69 percent of the more than 950 million trees planted in the four besides have been planted by individual commune members. Concurrent with the implementation of policies, action by each jurisdiction on the principle of from each according to ability and to each according to work, making sure that the material well-being of individual commune members and the final fruits of labor are organically linked, the implementation of various forms of a system of responsibility, with adaptation of general methods to local situations from the propagation of seedlings to afforestation to care of the forests, with specialized contracting, linking the calculation of compensation to production, and several fixeds and one reward, as well as signing of contracts throughout so that forestry units and individual commune members have authority, responsibility, and benefits have given further impetus to development of forestry production. The masses of commune members say from profound experience: "People call people to work, but they do not work; policies arouse countless millions." Gezhuang Production Brigade in Taocheng Commune, Yanling County assigned individual sections and tracts to 14 forest protection personnel for them to manage. After contracting, each forest protector set up a hut at the edge of his area to protect the forest day and night, and to fertilize and water it as needed. The forest grew prolifically. Experience everywhere has demonstrated that once a system of responsibility for agricultural prodcution has been put into effect, if a system of responsibility for forestry follows closely, the problem of growing saplings can be solved; existing forests can be protected; and forestry production can continue to expand.

9432
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POSSIBILITY OF ORGANIC DRY FARMING IN NORTH CHINA EXPLORED

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 10, 5 Oct 81 pp 18-19, 27

[Article by Zhang Qinwen [1728 3084 2494], Shanxi Provincial Zoning Office, "Tentative Discussion of Strategy For Organic Dry Crop Agriculture in North China"]

[Text] The Magic Weapon That the Chinese People Have Given to the World

The northern region of China with the Yellow River Basin as its center was the birthplace of Chinese culture and the center in which agriculture production originated as well. Beginning in the Han dynasty and extending through the Wei and the Jin to the Northern and Southern dynasties, farming in the Yellow River basin gradually came to consist of plowing, harrowing, raking, and hoeing primarily, fertilizing with large amounts of manure, conservation of water and soil, the growing of green manure, rotation of crops, and a combination of use and nurture of the land in a farming tradition. This is what we today term the "organic dry farming" agricultural tradition, which for several thousand years has effectively withstood drought and prevented soil exhaustion. This is the magic weapon that the Chinese people have given to the world, and it is the fine tradition of farming that must be continued in the process of realizing China's modernization of agriculture.

Foreign Agriculture Faces Tremendous Difficulties

In one of its annual reports, the American Academy of Sciences said: The 1950's and 1960's were an age in which mankind was swollen with arrogance. Artificial satellites, spaceships, the landing on the moon, and the flight to Mars became realities one after another. It was though mankind could conquer all. But in the 1970's mankind suddenly encountered perplexity and confusion. He discovered numerous difficult problems such as population increase, shrinking resources and environmental pollution. How mankind could restrict his own unlimited expansion, sensibly use and renew natural resources and purify his living environment became the common concern of all countries. Consequently, study and establishment of an equitable strategy for agricultural development that has as its objective a highly efficient ecological system is urgently sought by all. People have begun to realize that the earth's soil is not something that can be used at will as one desires. Increase in grain output depends largely on increases in per unit yields, and in the advanced countries, the major elements in high agricultural output at the present time, chemical fertilizer, pesticides, irrigation, herbicides, and fuels to provide power, are all seriously dependent on petroleum and natural gas. The so-called "green revolution" that began in the 1960's and signaled development of new grain crops, faces tremendous difficulties as a result of the energy crisis.

What is the way out? In the United States, where chemical agriculture is advanced, farmers using an organic farming system have appeared. They use accumulated manure and crop stubble instead of chemical fertilizer, and they use rotational cropping and cultivation at the right times to guard against weeds, using little or no herbicides, which both cuts down on expenses and results in increased yields. Scientists who conducted a survey on behalf of the United States Department of Agriculture have an optimistic attitude about the future prospects of organic farming. With the splendid tradition of Chinese agriculture as a foundation, the learning of modern scientific techniques to establish agricultural development on a foundation of replenishment and renewal of natural resources so that the ecological environment will become better and better, and the soil more fertile the more it is cultivated, using a strategy of organic agriculture has enticing prospects.

Thirty Years of Tortuous Road

Since the founding of the People's Republic, we have always used the electrification, mechanization, the bringing of all farmland under irrigation, and chemicalization as depicting the prospects of China's agricultural development. In fact, in implementing technological strategy in which the "four modernizations" has been the goal and principal ingredient as well, this has been "industrial-engineering agricultural strategy." To place hopes for agricultural development on support from industry and engineering measures while ignoring biological principles, ecological laws, and agro-technology is very lopsided.

Take Shanxi Province, for example. For the past 20 years or more, investment in the mechanization of agriculture has amounted to 2.5 billion yuan. Number of tractors per mu of cultivated land average more than in the USSR, and are close to the levels of the United States at the time when it put into effect the basic mechanization of agriculture. Rural electric power use averages 22 kilowatt hours per mu, a world high. Investment in water conservancy amounts to 2.8 billion yuan, the irrigated area amounting to 27.6 percent of the total cultivated area, double the world average ratio. Chemical fertilizer use averages 53 jin per mu, effective ingredients converting to close those of the United States and the USSR. "Industrialized conditions" in agricultural production have attained fairly advanced world levels. However, in afforestation and planting of grass, in the conservation of water and soil, in improvement of the ecological environment, in development of green manure, improving the soil, and increasing agro-technical levels, investment and support has been very little. Even now the forest cover rate for the province is only 7.2 percent, and soil fertility is steadily deteriorating. Cultivated soil in the province with an organic content of more than 1 percent exists on only one-fourth of the total cultivated land area. Elsewhere, the organic content is between 0.3 and 0.8 percent. A very great gap exists in the "ecological environmental conditions" and "soil conditions" for agricultural production as compared with agriculturally advanced countries. The level of agricultural production is very low, grain yields averaging only 332 jin per mu, and on the thin soils in half the province, yields are less than 200 jin per mu.

The root cause of impediments to China's agricultural production are, of course, leftist mistakes; however, failure to take opportunities in technical strategy for the development of agriculture is another major reason. In their book, "Report of Observations of the Agricultural Situation in Taoyuan County," the famous Tokyo University professor Tamura Saburo [3944 2625 0005 6745] et al noted that Chinese technicians suppose that use of composted manure and such organic fertilizer is "out

of date," but this is a kind of errant modernism. I feel this criticism is very much to the point. For the past 30 years, China has ignored the modernization of "soil conditions" and biological techniques inherent in agricultural production, investing heavily and using great technical forces on conditions external to agricultural production--"industrialized conditions"--and this has indeed been "errant modernism." Quite a few high output areas lose money through farming, becoming high output poor brigades. China's "organic farming," so vaunted abroad, is really a case of seeming better than it really is.

Bringing Into Play the Role of Soil and Reservoirs.

Per unit crop yields are determined to a very great extent by soil fertility. Analysis by a group of agricultural specialists and economic management experts showed that on a scale of 100 for the various technical factors effecting agricultural output, the soil factor (including fertilizer) would amount to 60. Therefore, for high yields in agriculture, it is necessary, first of all, to foster fertile soil.

Fertile soil is able to store a large amount of moisture and nutrients, and is able, when weather conditions are bad, to continue to supply the water and nutrients that crops need. It is an automatic ecological system.

Thin soils have an organic content of less than 1 percent; their slaked layer is only 15 to 20 centimeters, and the volume of moisture and nutrients they can carry are greatly affected by external temperatures and humidity. Their moisture and nutrients are used up fast. To assure bumper harvests, one will have no choice but to irrigate and apply fertilizer to the crops frequently, increasing the amount of human regulation and control. If this human regulation and control falters, disaster in the form of a drop in output will follow.

In many parts of North China, most of the precipitation is concentrated between July and September. During the spring season, when water is crucial, little rain falls, so the most basic way in which the problem of dry conditions is solved is to parcel out for use the rain that has fallen during other times of the year, storing summer and autumn rain for use the following spring. Which is the better road to take, "accumulation of water in projects' or "letting the soil store water"?

It must be recognized that in North China areas that get little rainfall, hopes that construction of water conservancy facilities will fundamentally solve problems of drought, and expectations of increased amounts of man-made rain or regulation of the distribution of rainfall during the course of the year will continue to be difficult to achieve, given the current state of science and technology. Take Shanxi Province, for example. Forecasts call for development in the near future of an irrigated area that will serve only 30 percent of the cultivated area. The basic situation in mountainous regions of North China and throughout the entire loess plateau area are similar to those in Shanxi. Of course, water conservation that should be built should continue to be built; however, we should not devote attention solely to this. Large scale increase in fertilization with organic fertilizer to increase the soil's organic content, and the adoption of farming methods to combat drought can increase the ability of the soil to store water, accumulating the copious rains of summer and autumn to satisfy the needs of the spring season to solve the problem of most of the rainy season taking place at a time other than when the crops need rainfall most.

A report by the Shanxi Water and Soil Conservation Institute of the Chinese Academy of Sciences says that soil from the loesslands that has undergone improvement to increase its fertility has a water carrying capacity of 200 to 300 milliliters per meter of topsoil, and is able to store most of the rainfall for a long time, putting autumn rain away for spring use. Thus, this soil may be regarded as a "soil reservoir," possessing the valuable traits of "no dryness in the earth when the heavens are dry." Calculations made as a result of survey and study done in Shanxi show that improvement of soil fertility, plus timely summer plowing under of summer crop stubble and cultivation of autumn crops, permits each mu of cultivated land to hold 130 cubic meters of water. If this were achieved on the 40 million mu of drylands in the province, 5.2 billion cubic meters of water could thus be stored. This amounts to six times the volume of water stored in ordinary years in existing reservoirs throughout the province. This moisture stored in the deep layers of the soil can stabilize the quantity of moisture in the cultivated soil layer. Measurements made at the Zhongliang Brigade in Xiangfen County show that following improvement of fertility, dryland wheatfields that used cultivation techniques for combating drought had a cultivated layer water content of between 2 and 3 percent more than in the same type of infertile wheatfields. By practicing farming techniques for combating drought on its dryland millet fields, even under the serious drought conditions of the spring of 1965, the quantity of water in the cultivated layer of the soil preliminary to sowing at the Jinzhuang Brigade in Huguan County was 4.2 percent higher than in control fields, guaranteeing emergence of seedlings for a full stand.

In fertile drylands, the production efficiency of water is greatly increased. Measurements taken at the Dongguanzhuang Brigade in Wenxi County, Shanxi Province show that for every millimeter of rainfall on dryland wheatfields with an organic content of more than 1 percent, 1.36 jin of wheat was produced. On infertile wheatfields, however, output was only 0.52 jin. The former was between 90 and 160 percent higher than the latter. Representative examples of consistently high yields from drylands in North China convincingly demonstrate the extremely optimistic prospects for using water stored in soild for dryland farming. After improving fertility and practicing farming methods to combat drought, Dongguanzhuang Brigade in Wenxi County, Shanxi Province harvested yields of more than 300 jin per mu for more than 10 years in a row from almost 1,000 mu of drylands. Yields of more than 800 jin per mu of millet were harvested from large areas of drylands in Jinzhuang Irigade, Huguan County. At the Guandaoliang Experimental Farm in Wangjiagou operated by the Shanxi Provincial Water and Soil Conservation Institute, 71 mu of terraced grain fields produced yields averaging 530 jin per mu over a period of 20 years, the highest yield averaging 991.6 jin per mu in 1976. In the severe drought year of 1965, yields still averaged 327 jin per mu. At the Siyaoxian Brigade in Ansai County, Shanxi Province, terraced cornfields produced yields of 1,000 jin per mu. In the great drought year of 1977, yields still amounted to 700 jin per mu.

In some agriculturally advanced foreign countries, except for the United States where dryland crop farming predominates, development of agriculture has also taken the dry route, as in Canada (where the irrigated area is 1.1 percent of total cultivated area), in France (3.0 percent), and in Yugoslavia (1.8 percent). Experience both at home and abroad has demonstrated that dryland farming is by no means "agriculture dependent on the heavens," nor is it tantamount to extensive planting for meager harvests. It is a form of consistently high yields with fairly low requirements.

The Technical Strategy of Acting According to Capabilities

Organic dry farming strategy is both a long term strategic goal and the best short term way of going from low yields to high yields and of transforming poverty into prosperity. It is a strategy requiring little investment, great output and optimum technical and economic benefits. It is a realistic strategy of acting according to capabilities. The main ways of carrying out this strategy are as follows:

First leveling the soil. In addition to doing a good job of afforestation, planting grass, and soil and water conservation, hillside fields must be built into flat terraced fields; raised fields and dams must be built in ravines; small plateaus have to be built up at the bends of streams; and flatlands have to be made into gardens.

Second is massive fertilization with organic fertilizer to increase the soil's organic content. Vigorous efforts should be made to develop a livestock industry using stalks and stems to feed the livestock and livestock manure to fertilize the fields. Major efforts in methane gas production, and the spread of techniques for using solar energy. Building of a civilian coal burning supply network. Encouragement of tree planting by commune members to increase firewood. Implementation in places where there is a lot of land relative to population of private mountain and private hillside policies for the creation of more firewood forests. Great growing of green manure for a revival and carrying forward of the traditional system of crop rotation. In watery areas, development of aquatic green manure. Centralized processing of urban garbage and sewage to produce fertilizer. Intense attention to research and development, production and supply of organic bacterial fertilizer, humic acid fertilizer, agents for increasing soil temperature, and agents for improving soil structure.

Third, deep plowing and a series of farming techniques to combat doubt, to hasten improvement in soil structure and properties, balancing water, fertilizer, air, and heat in the soil, making fullest use of latent soil fertility, and increasing the ability of the soil to store water and conserve moisture.

Fourth, vigorous promotion of drought resistant crops and breeding of superior drought tolerant varieties.

Fifth, sensible fertilization. A good job of regular soil surveys and diagnoses, acting to replensih soil nutrients that are particularly deficient.

9432
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DU ZIDUAN ON IMPORTANCE OF RURAL ENTERPRISES

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[Text] Beijing, November 18 (XINHUA)--China's rural industries and enterprises employ ten percent of China's rural labor force but account for one third of the total income of rural collectives, according to the Ministry of Agriculture.

Du Ziduan, vice-minister of agriculture and concurrently director of the ministry's general bureau of rural enterprises, said that the rural enterprises have become a principal source of income for the peasants. A survey shows that almost all the well-off communes and production brigades in China have got substantial benefits from their own rural enterprises. On the rural outskirts of Shanghai and some parts of Yangtze River delta where such rural enterprises flourish, about half of the annual income received by the peasants from the collectives comes from this source.

The vice-minister said that the rural enterprises provide jobs for surplus rural labor force. Some 30.5 million people are now employed by the rural enterprises.

The rural enterprises produce small-sized farm machinery and tools, chemical fertilizer, pesticide, cement and process agricultural produce and by-products. They also make light industrial goods and handicraft articles and engage in planting tea and fruits, raising poultry and livestock, and in building, transportation and service trades. In 1980 they turned out nearly 10,000 varieties and specifications of products.

Rural enterprises comprise an important component of China's industry, the vice-minister said. In 1980, the total industrial output value of the rural enterprises amounted to 10 percent of the country's total. In the same year they turned out eight percent of the nation's total export volume.

Rural enterprises on the outskirts of Beijing, Shanghai, Tianjin and other major cities have become an indispensable adjunct to state-owned, large industrial enterprises, producing and processing machine parts for them.

The total output value of rural enterprises amounted to 61,400 million yuan in 1980, 22 percent higher than that in 1979; and in the first half of this year, it rose by another 10.4 percent.

The growth of rural enterprises promote the development of small towns, he said. With the establishment of manufacturing and processing industries, educational and recreational facilities, shops and other catering services, thousands of rural settlements have become townships where the residents are engaged in both industry and agriculture.

Three million peasants work in rural building enterprises and factories producing building materials to meet the growing needs of peasants to build new houses.

The rural enterprises accumulate funds for agricultural production, the vice-minister added. During the period from 1978 to 1980, rural enterprises, while setting aside funds for their own expansion, provided 7,600 million yuan for construction of water conservancy works, purchasing farm machinery and aiding economically backward production teams.

China's rural enterprises have been set up and developed since the 1960's, with funds raised by rural communes and sub-divisions in developing rural collective economy.

Since China has abundant natural resources and rural labor force and a big domestic market, said Vice-Minister Du Ziduan, rural enterprises have bright prospects of development.

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ADVANCED RURAL PRODUCTION BRIGADES URGED TO AID BACKWARD UNITS

Beijing NONGCUN GONGZUO TONGXU [RURAL WORK NEWSLETTER] in Chinese No 10, 5 Oct 81 pp 2-3

[Article: "Effectively Help Advanced Brigades Continue Their Forward Advance"]

[Text] This issue of this magazine has presented two surveys of the steady progress in the midst of reform by the Liming Production Brigade in Heilongjiang Province and the Baizhuang Production Brigade in Henan Province. The experiences of these two brigades demonstrate that even in advanced brigades in which the collective economy is fairly well run, it was necessary to undertake reform in a seeking of truth in facts in order to further increase the enthusiasm for production of commune members. This is a major matter affecting the consolidation and development of the socialist collective economy in rural communes, and CCP committees at all echelons should devote extreme attention to summarization and promotion of the experiences of advanced brigades in reform, effectively helping them to continue their forward advance.

Nationally, advanced rural production brigades currently number about 30 percent of all brigades. These advanced brigades possess the following common characteristics: Production conditions have undergone remarkable change; both production levels and the commodity rate are fairly high; and commune member living standards have considerably improved. Under the leadership of the party, these brigades have long hewed to the socialist road to triumph over various hardships and expand agricultural production, increase the public accumulations of the collective and the income of the peasants, to improve the livelihood of the masses, and to provide the state substantially more agricultural byproducts. They have made a major contribution and played a model leadership role in developing the collective economy, and in helping build socialism, and have demonstrated the superiority of socialism in rural areas.

Of course, advanced is only a comparative term. Because of the influence of leftist errors and the as yet imperfect rural socialist economic system, egalitarianism and eating out of a "large common pot" exists in various degrees in advanced brigades. Also existing is single crop economies, poor management, large expenditures, low economic benefits, insufficient democracy among cadres; and taking more than one's share. The commune members' burdens are quite heavy. All these things act to restrain further arousal of commune member initiative and the development of productivity. They must be reformed. Since the Third Plenary Session of the 11th Party Central Committee, and particularly since implementation of Central Committee Document Number 75, with the establishment and perfection of systems of responsibility

for production, rural villages have been facing a situation of thoroughgoing reform of the economic system. Numerous poverty stricken and backward brigades, or those in an intermediate state, have been able to make a fresh start within a year once they have carried out reform. This has also sounded the alarm bell for advanced brigades. Without further reform, advanced brigades may turn into backward ones. As some advanced brigade cadres said, "Poverty stricken and backward brigades are on uncertain ground. Unless we improve further, we will become backward." The reason that advanced brigades have been advanced has been their steady innovations. We place our hope in advanced brigades raising high the banner of reform under new conditions, quickening the development of agricultural production, vigorously developing the commodity economy, and continuing to play a model leading role.

The situation differs from one leading brigade to another, and so the requirements for reform and the means of reform cannot be uniform. However, judging from the situation reported from everywhere, the emphasis should be: Continued overcoming of egalitarianism with distributions according to work; reform of the single crop economy, and development of diversification; putting an end to extravagance and waste and increasing economic benefits; improvement in cadre work style, and close relationships between cadres and the masses.

Egalitarianism is a negation of distribution according to work. In order to further implement the principles of distribution according to work and greater gain for greater work, it is necessary to continue to surmount egalitarianism and to acknowledge the commune members' material interests. On how well the method of distribution according to work is perfected will depend whether from each according to ability will be promoted. If this method is able to advance from each according to ability and increase commune member sense of responsibility for the collective economy, production will rise; earnings will increase; commune members' material interests will be satisfied; and they will be even more concerned about development of the collective economy. A proper mix of collective benefits and individual benefits are the driving forces in development of the collective economy. We cannot only stress the collective economy while ignoring the individual welfare of commune members. The key to overcoming egalitarianism lies in the establishment and perfection of a system of responsibility. Today about 7.75 percent of all advanced brigades in the country practice systems of responsibility of specialized contracting and linking of planned production to calculation of compensation. Under unified administration, these systems of responsibility practice specialized division of labor and combine, in an equitable way, workforces and the means of production to help commune members be masters in their own house and make the most of their abilities. From another standpoint, in calculating labor and reporting for compensation purposes, the recording of workpoints on the basis of output or output value, and the direct linking of how well a commune member did his work to the final fruits of labor, which can be seen and touched, the more the work the greater the gain, effectively surmounts egalitarianism and eating out of a "large common pot." Step by step establishment and perfection of systems of responsibility of specialized contracting and linking production to the calculation of compensation, and the use of these methods as a starting point for continued progress, is a correct course for advanced brigades in undertaking reform.

Without reform of the single crop economy, further increases in output or earnings will be extremely difficult. One of the major reasons why expansion of production is not very fast in some advanced brigades is that for a long period of time, a

preponderant amount of attention has been concentrated on a limited amount of cultivated land, while virtually all of the cultivated land is devoted only to the growing of grain crops. There is little concern for real conditions, no calculation of production costs, and no questioning of economic benefits. As a result, though grain output increases, diversification is pushed aside and earnings drop. This is a lesson that must be learned. On the basis of local resources, overall planning must be done taking all factors into consideration, and crop patterns layed out in a sensible way. Without any relaxation in grain production, avenues of production must be widened, diversification launched, and commodity production expanded. To launch diversification, both collective and individual initiative must be brought into play. While practicing unified administration, active encouragement and support must be given individual commune members to develop household sideline occupations. in accordance with the spirit of instructions from the Central Committee, and by adapting general methods to local situations, appropriate enlargement of private plots and fields for the growing of livestock feed may be done, and some of the under-employed and auxiliary labor force not engaged in collective labor may be permitted to devote themselves solely, insofar as is possible, to household sideline occupations.

Reform of administration and management to increase economic benefits. Looked at from the outside, there presently seem to be certain limitations on increase in advanced brigade economic benefits, as, for example, the great price scissors between agricultural and industrial products, which adds, in every way, excessive burdens to the collective economy. Some cadres say, "Right now, we're flogging a running ox; the more advanced we become, the more we suffer." This is not without reason. These external problems naturally require gradual solution. Nevertheless, in another sphere, poor management greatly hobbles development of the collective economy. In the capital construction of some farmland, formalism, extravagance and waste exist. Production is done without calculating costs; there is no concern about economic accounting; financial management is in a shambles; effectiveness from investment in farm machines, chemical fertilizer and irrigation is very small, and production costs mount as high as 50 to 60 percent. Production increases but earnings do not. Commune members say, "Gladdening output, frightening expenditures, and disappointing distributions." This situation urgently requires change. In order to arouse further commune member concern about the collective economy, concurrent with perfection of systems of responsibility and the practice of diversification, must be attention to financial restructuring, institution of democratic money management; broadening sources of income and reducing expenditure, frugality in operation of communes, strengthening of cost accounting, perfecting capital and fiscal management systems, putting a stop to extravagance and waste, and endeavoring to derive the maximum economic benefit from the minimum expenditure.

Improvement of cadre work style and cementing relationships between cadres and the masses are conspicuous problems that must be conscientiously solved in the process of reform. The reason advanced brigades are advanced is that they have a group of good cadres (including labor models) who are a fine team eager for collective endeavors. They do not fear difficulties in work, and they have played a very good role in leading the masses in arduous pioneering work. This spirit should be preserved and carried forward. At the present time, commune members everywhere report heavy burdens. This is not a problem peculiar to impoverished and backward brigades, but one that exists in advanced brigades as well. There are many reasons why commune members' burdens are heavy, but this problem is also closely connected to the unhealthy tendencies of some cadres. Some cadres do things undemocratically and

unfairly. They use the authority of their positions for private advantage, take more than they are entitled to, and participate but little in collective labor. This state of affairs merits arousal of close attention. Advanced brigades should devote effort and take the lead in changing cadre work style and in cementing relations between cadres and the masses. Communes should be run democratically with important brigade matters being discussed and decided by commune members, commune members being allowed to take charge. "Better staff and simpler administration" should be practiced, the number of cadres and non-productive people enjoying subsidies not being too numerous, subsidies not being overly high, and specific ways of doing things being discussed and approved by commune members. Cadres should be educated to participate in labor and not selfishly and indulgently place themselves into sideline occupations. They should not entertain guests and send gifts, and they should not take more than their fair share of anything, but rather diligently and conscientiously take care of things for the collective and handle matters for commune members. Only when cadres and the masses are as one can advanced brigades give a good account of themselves and be able to develop their skills to the full.

Leadership of advanced brigades can only be strengthened; there can be no relaxation. One situation presently meriting attention is that some leadership cadres dare help impoverished and backward brigades or those in an intermediate position, but regard advanced brigades with a different eye, fearing that people will say their mentality is not emancipated and thus not daring to render assistance. This is obviously wrong. The situation in advanced brigades differs from that in impoverished and backward brigades, and the ingredients of reforms also differ. No kind of a system of responsibility can be made absolute. One should act in accordance with the spirit of the Central Committee directive, emphasize action in accordance with realities, practice tailored guidance, and dare straightforwardly to render support and assistance to advanced brigades. All levels of leadership should, as always, regularly go into advanced brigades to help them act according to realities, to summarize experiences, to seek out deficiencies and steadily improve. Right now it is necessary to give particular attention to advanced brigade experiences in reform. Only by giving attention to reform can advanced brigades win through in reform and steadily advance!

9432
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IMPETUS GIVEN TO IMPROVED MANAGEMENT OF WATER CONSERVANCY PROJECTS

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 9, 5 Sep 81 pp 2-3

[Article by Special Commentator: "Stress Management; Limit Construction Within Capabilities; and Make Farmland Water Conservancy More Effective"]

[Text] Dryness and little rain continued in the North China region this spring, and during the summer the greatest flooding since the founding of the People's Republic occurred in the upper reaches of the Yangtze River. Serious natural disasters have sorely tested water conservancy projects. The struggle in various places to resist drought and withstand floods has made us realize, on the one hand, that the arduous struggle by the entire party and all the people during the past more than 30 years, and the large numbers of water conservancy projects built through self help have indeed played a tremendous role in the struggle against calamity. On the other hand, however, it can also be seen that our existing water conservancy projects and facilities are a very long way from being able to satisfy needs in guarding against floods, getting rid of waterlogging, for irrigation, and for water in cities, the countryside, industry, and daily life. In many places, capabilities to withstand natural disasters are still very weak. Consequently, we must proceed from consolidation of existing water conservation projects, and while improving conditions for agricultural production, strengthen management, adapt general methods to local situations, give tailored guidance, and act within capabilities for active and effective development of farmland water conservancy construction.

In terms of the present, shifting the focus of water conservancy work first to management is, on the basis of the current overall policy of readjustment of the national economy and the realities of water conservancy construction, a major decision and one that is fully necessary. We have already constructed a large number of water conservancy projects, and we possess a substantial water conservancy foundation. However, for a long time under the guidance of leftist ideology, construction was emphasized while management was slighted. The erroneous tendency toward many projects and few benefits was never fully resolved. In numerous projects that have already been constructed, full benefits were never attained, and in some projects continuous damage was done as a result of poor management, and benefits declined. Some projects have never been completely fitted out, and they have not seen normal use for a long period of time. A large quantity of inspection data from everywhere shows that for identical projects, benefits vary greatly depending on how well they are managed. No matter whether the average amount of water used per mu in irrigation areas, or the amount of electricity (or petroleum) expended per thousand meters by machine and

power drainage and irrigation stations, or the area watered by pump wells or simple wells, benefits differ one or two fold or even more than 10 fold depending on whether the facilities are well or poorly managed. Were about one-half of the country's irrigation area irrigation stations and pump wells to effect a strengthening of management, recondition, fully equip, level fields, and use water scientifically to bring benefits from irrigation up to existing levels in units having advanced management, the irrigated area of the country could be increased by 100 million mu and a great saving realized in petroleum and electric energy. This would be equal to the new construction of several hundred large and medium size irrigation areas and machinery and electric drainage and irrigation stations. Therefore, good management, good use, and proper fitting out of existing projects and facilities is the way to save expenses and increase benefits. Strengthening of management requires attention to democractic management, specialized management organizations, and mass management, working in close combination with specialized management organizations and making sure to heed the needs of the masses in irrigation areas and the views of irrigation area representatives. It requires attention to economic management, with diligent promotion of a system of personal responsibility in all tasks that includes responsibility, authority, and benefits, rewards commensurate with work, and issuance of rewards and penalties. It requires attention to technical managment, doing things in accordance with natural laws, assuring project safety and completeness of facilities, promotion of scientific use of water, tapping of unused potential, and steady increase in benefits.

When we speak of placing the emphasis of water conservation work on management, that is certainly not to say that there should be no further construction of new water conservancy project. In places where the water conservancy foundation is weak, development of agricultural production slow, and guaranteeing safety from floods urgently needed, there must continue to be planned, step by step operation of new water conservancy projects; however, these problems must be solved gradually on the basis of the country's financial ability, the economic benefits to be realized, and after weighing the advantages and disadvantages and the priority to be assigned. As far as small farmland water conservancy projects are concerned, so long as a need exists in production, and so long as the masses want them, provided they are within the capabilities of communes and brigades, the masses should be actively organized to carry them out. But technical guidance must be intensified, economic accounting instituted, attention given to adaptation of general methods to local situations, and tailored guidance given. For example, some places can fill in gaps to further increase capabilities to combat drought or waterlogging disasters; some places require replacement, with all possible speed, of projects destroyed by water; and some places have a weak water conservancy foundation and require emphasis on construction, etc. In short, action should be taken on the basis of needs and capabilities. There most certainly should not be any "arbitrary uniformity" or blind direction.

The Sixth Plenary Session of the 11th Party Central Committee called upon us to "unite and struggle to build a socialist and modern powerful nation." Farmland water conservancy is an important material foundation for development of agricultural production, and an indispensable condition for the building of modern agriculture. Farmland water conservancy construction is not a matter of what should or should not be done, but rather a matter of how best to do it and how best to use it. No matter whether looked at in terms of problems revealed in this year's drought and flood situation or in terms of the need to prepare for further development of agriculture in the future, gradual accumulations fromlabor to operate farmland water conservancy projects is both possible and completely necessary.

On the basis of the aforementioned requirements, farmland water conservancy work this winter and next spring requires, first of all, strengthening of the management of existing projects and facilities, restructuring and strengthing of management organizations, building and perfecting a system of rules and regulations, adaptation of general methods to specific situations in the promotion of various forms of a system of responsibility, closely linking the responsibilities, authority, and benefits of managers, and overcoming the method of operation whereby one could eat out of "a large common pot" no matter whether managment was done well or poorly. There must be effective achievement of management by specialists of large and small projects, and of ditches, ducts, wells, pumps, and stations. In regard to the problems of grassroots managerial personnel and commune water conservancy personnel that await solution, various different ways should be found in an effort to solve them rapidly and well. Every effort should be made to use local advantages to develop diversification and achieve self-sufficiency with some surplus. At the present time, management of drainage ditches is an even weaker link, and numerous ditches are in a state of management by no one. Sluice gates have been erected in them at random, and silting is serious. Emphasis should be given this autumn and winter to solving this problem.

Secondly, there should be planned, step-by-step annual repairs, desilting, installation of equipment, prevention of leakage, restoration to safe operating condition of projects damaged by water, leveling of soil, and helping commune and brigade members build, insofar as their capabilities permit, small farmland water conservancy projects. No matter whether in equipping, continuing construction, or building of new projects, a good job of surveying and planning must be done. The hydrological, geological, and agricultural production situations must be understood, making sure that the water resources are available, that there are no geological problems, that a need exists for agricultural production, and that there is no conflict between the upper and lower reaches of waterways. When this has been done, plans should be drawn up and design and construction organized. In the process of organizing for construction, policies should be conscientiously put into effect and the principles of equitable burdens, exchanges at equal value, and payment of compensation according to work adhered to. There should be no practice of egalitarianism and indiscriminate transfer of resources, no great uproars, and no eating out of "a large common pot." From the very beginning of construction, management work should be placed on the daily agenda. In the process of construction, it should be quality first, careful organization, and careful construction. Before the project is completed, action should be taken to set up a management organization. Management personnel must have a part in the approval and acceptance, must strictly maintain continuity in procedures, and establish project files. Until the project has been completed and fully equipped, construction units may not withdraw, and management units have the right to refuse acceptance on the basis of relevant regulations.

Third, meeting new situations in rural villages and solving new problems. Following the Third Plenary Session of the 11th Party Central Committee, with the implementation of rural policies and the institution of various forms of a system of responsibility for agricultural production, very great changes occurred in rural villages. These changes, brought new problems for water conservancy construction, particularly for farmland water conservancy construction. In some places where a system of linking output to the workforce, contracting production or work with individual households was instituted, organization to work on water conservancy repair became more difficult than formerly: raising of funds became more difficult; and problems of land use for projects became more difficult to solve. In some places instances occured in which

wells were filled in, ditches were leveled and water conservancy destroyed, water conservancy machinery and electrical facilities being divided up and sold. Investigation of these situations has shown that the key element lay not in rural institution of a system of responsibility, but rather that our water conservancy management work had no corresponding way of keeping pace. There was no active promotion of farmland water conservancy management and a system of responsibility for projects. Instead old, stale work methods continued to be used. In some other communes and brigades, following contracting for production with individual households, management of water conservation facilities was abandoned. Naturally this resulted in damage and losses at water conservancy projects. Experiences at numerous places shows that once rural villages instituted a system of responsibility for production, had leaders only given serious attention, taken prompt action, and used commensurate management methods and measures with regard to water conservancy, not only would they have been able to insure completion and normal use of existing projects and facilities, they would also have been able to effect new development of farmland water conservancy construction. After rural systems of responsibility for production were established in Jianyang Prefecture, Fujian Province, a new atmosphere of "three more and three less" emerged in water conservancy projects, by which is meant more adaptation of general methods to local situations and taking reality as the point of departure, and less blind and chaotic action and raising a big hue and cry; more respect for commune and brigade self-determination, and less resort to commandism and coercion and issuance of blind direction; institution of a system of responsibility for water conservancy management with more of the contract system, and less eating out of a "large common pot." In short, whenever we strengthen leadership, use vigorous measures, adroitly guide action according to circumstances and maximize benefits while minimizing disadvantages, no matter whether in the institution of any form of a system of responsibility for production, farmland water conservancy construction and management work are done somewhat better. Effective and workable ways that each jurisdiction has gradually summarized as the result of experience during the past 2 years with systems of responsibility and the contract system for water conserancy may be spread elsewhere, and constantly perfected and improved in the course of actual work.

Fourth, this winter and next spring advantage should be taken of the current period of readjustment to give attention to various basic tasks and the work of the previous period, and close attention should be given the formulation and reform of various systems, creating conditions for future development of farmland water conservancy construction. At the same time, great effort should be made for planned, incremental training of cadres and workers to raise their political quality, their professional levels, and their technical levels. This is a kind of major capital construction that must on no account be neglected.

Most parts of the country today have entered the season of the year that favors building of water conservancy. There are the three periods of before and after the autumn harvest until it becomes very cold, and following the lunar New Year until spring planting. Arrangements can be made in a planned way for winter and spring farmland water conservancy work, to do comprehensive planning, to strengthen leadership, to adapt general methods to local situations, and to act within the limitations of capabilities to actively and steadily do a better and more effective job of farmland water conservancy construction in the spring and autumn.

9432
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EFFECTS OF SHADING DURING DIFFERENT STAGES OF GROWTH ON RICE YIELDS

Guangzhou GUONGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 5, 8 Sep 81 pp 1-5

[Article by Mao Bijun [3029 3880 0689], Lou Yonghai [2869 3057 3189], Yu Jinquan [0151 6651 3123], Huang Chilin [7806 3589 2651], and Lao Xiaoming [6351 2556 2494], Rice Institue, Guangdong Provincial Academy of Agricultural Sciences: "Effects of Shading at Different Periods on the Filling Out of Grain in Rice Varieties Following Full Heading"]

[Excerpts] The fruiting rate of rice is determined primarily by the intensity of photosynthesis after heading inasmuch as between two-thirds and three-fourths of the material in the filled out grains is the product of photosynthesis after heading. Recent research done by the International Rice Institute also attests that a decrease in light during the maturation period leads to a decline in the fruiting rate, and a drop in yield.

At the present time, the period of heading in most rice growing areas of Guangdong Province is concentrated around mid-June. This is the time of the "dragon boat rain" weather, which means rainy, overcast days and scant sunshine, which very greatly impairs the filling out of the grain. The heading period for late rice is concentrated in early or mid-October. Historically the weather has been clear and bright during this period, but in the last 10 years, as a result of the startling increase in the arrival in Guangdong of autumn typhoons, much overcast and cloudy weather has resulted, and this is also one of the reasons leading to inconsistent late rice crop output. Present technology makes a change in the weather rather difficult, but effects of the weather can be thwarted or avoided by production patterns and planting techniques. The pattern of varieties planted constitutes a major method. Sensible juxtaposition of varieties that mature at different times for a readjustment in the seasons has been widely used for some time in production. However, the effect on the filling out of the grain of light conditions following heading, and the difference in reaction among varieties maturing at different times is still not clear. Therefore, this experiment has set up varieties maturing at different times and varied light deprivation following full heading to study the different reactions to the deprivation of light on the filling out of grain in varieties maturing at different times in order to provide date for techniques that can make the most of advantages and avoid disadvantages for consistently high yields.

Discussion

(1) The results of the experiment in which yield fell as a result of a decline in fruiting rate when light intensity was reduced following full heading were identical to those obtained in previous study by others. However, the extent of drop in yields among varieties with different periods of maturation was different. Early crop late maturing rice variety "661" showed fairly light decline in yield; medium maturing and medium-late maturing variety "Guichao No 2"; "Zhenzhuai No 11" and "Shanyou No 2" were second; and early maturing variety "Guangluai No 4" showed greatest decline in yield. The reason was that shading for early maturing varieties following full heading had a fairly large affect on photosynthsis. This was manifested in striking decline in both the fruiting rate and the per thousand weight of grain. In addition, the in-the-milk and maturation stages were short, and the compensatory function during the late stage of maturation was not evident. In addition, the quantity of nutirent material stored in the stems and sheaths of early maturing varieties during the early stage was slight, and the quantity of stored material circulated following heading was not great. It was greater in late maturing varieties. Conversely, the material stored in the stems and sheaths of "661" and "Guichao No 2", and such medium and late maturing varieties was circulated in fairly large amounts. In addition, during the in-the-milk and ripening periods, the compensatory function during the late stage was evident, and thus the extent of decline in yields was fairly light.

Among late crop varieties that mature at different times, the drop in yields was most serious in late maturing variety "Erbaiai," the main reason being that when "Erbaiai" was shaded after full heading, the increase in dry weight of panicles was strikingly slower than for other varieties, and both the fruiting rate and the per thousand weight declined noticeably. It may be seen that varieties of the "Erbaiai" type have rather strict requirements for light during the in-the-milk stage. Secondly, it may be that the fairly low temperatures during the in-the-milk and grain plumping stages, resulting from the fairly late heading of "Erbaiai," had something to do with this.

(2) Analysis of many years of weather data shows that except on Hainan Island at the Leizhou Peninsula, in most regions of Guangdon Province, the "dragon boat rain" weather is concentrated mostly around mid-June. Because of the ill effects of the "dragon boat rain" weather, in addition to the concentrated rainfall during the first, second, and third five day periods of June, the quantity of solar radiation and hours of sunshine are both at a low level, lower by an average of one-fourth to one-fifth as compared with the fourth, fifth, and sixth 5 day periods. Differences in the duration of "dragon boat rain" weather from one year to another are even more striking. Therefore, by readjusting crop seasons and suitably increasing the proportions of intermediate and late maturing varieties planted, such measures being correlated to actual local conditions, the heading and in-the-milk stages of early rice can largely avoid the ill effects of the bad "dragon boat rain" weather.

A look at the results of this experiment shows that following shading of late maturing varieties of late crop rice, the extent of decrease in yield was fairly great. Consequently, in terms of making the most of advantages and avoiding disadvantages, and in terms of the orientation of future breeding of varieties, early and medium maturing varieties of late crop rice should be selected for growing, and an advance of their heading stage to between late September and the first 10 days of October would be rather favorable. However, in most parts of Guangdong Province today, late

maturing varieties still predominate in production, and until problems with consistently high yields from early and late maturing varieties are solved, reliance will have to be placed on regulating the growing season through early sowing and early transplanting so as to get early full heading. This will not only help extend the vegetative growth period in local fields and avoid the "cold dew wind", but will also, in the event of overcast and rainy weather during the heading and in-the-milk stages, help increase the compensatory function during the in-the-milk and grain plumping stages, reducing loss of output.

(3) The reduction of yields occasioned by the diminution of sunlight following full heading, can be reduced and compensated, to a certain extent, by improved planting techniques. Such techniques include increasing the vegetative growth period in fields, guarding against over fertilization with nitrogenous fertilizer, proper sunning of fields in mid-season, enhancing the storage of nutritional material in stems and sheaths before the period of full heading, and increasing the circulation of nutrients toward panicles following full heading.

Second, attention must be given to preservation of root and leaf functions during the late stage, to lengthening the in-the-milk and grain plumping stage, and to increasing the compensatory function of the late stage as effective means.

9432
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FURTHER DEVELOPMENT URGED IN FISH CULTURE

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 8, Aug 81 pp 20-21

[Article by the investigations group of the National Bureau of Aquatic Products: "Key Points in Developing Freshwater Fish Culture"]

[Text] Some time ago, we went to eight countries in the four prefectures of Huanggang and Jinzhou in Hubei Province and Hengyang and Yueyang in Hunan Province. We investigated fish culture in farm villages at key points and felt profoundly that we will have a stable and reliable foundation if this big business of fish culture in farm villages and the development of the entire freshwater culture can be grasped well.

Potential of Cultivating Fish in Ponds Is Great

Fish cultivation in farm villages is mainly fish cultivation in ponds. Except for the few large mountain regions in Hubei and Hunan, almost every brigade has several large and small ponds and most of them are suitable for developing fish cultivation. The area of ponds in the two provinces, according to statistics, is 1.5 million mu in Hubei and 2 million mu in Hunan. The actual area is much larger.

The rate of utilization in the two provinces is about 80 percent, but the number of ponds used for raising and cultivating fish is small. In most cases, fish are released in the ponds at the beginning of the year and harvested at the end of the year, but the fish are not fed or taken care of in the meantime, "people release the fish and let the heavens cultivate them." The unit area yield is very low. But in those units where fish have been cultivated conscientiously, there has been multiple increases in the yield. The eight counties now all have a group of communes producing a per mu yield of over 300 jin, brigades that produce over 500 jin, and production teams that produce over 1,000 jin.

The 30,000 mu in Xishui County in Hubei has a per mu yield of 280 jin. The 46,500 mu in Qidong County in Hunan produce nearly 260 jin per mu. These places can produce a relatively high yield because the leadership has emphasized fish cultivation and the enthusiasm of the masses in fish cultivation has heightened.

Fish cultivation in farm villages utilizes presently available water surfaces; it does not occupy cultivated land; it does not need massive investments for

construction; it does not use massive amounts of food grains and feed, and it is beneficial to promoting the production of food grains. The ponds in farm villages generally are all within the territory of one team, the ownership and user's rights are all clear, and they are easy to manage. The water surface area is small and suitable for fine cultivation, also the production techniques are not difficult to grasp. The cost of cultivating fish in ponds is low, the results are quickly realized and the gain is great. It is indeed an important way to develop diversification. The Xincun Brigade of Guankou Commune did the following calculations: In cultivating 1 mu of fish, the net income of the collective is equivalent to that from 2 mu tea plantations, 1.8 mu of dryland and 2.8 mu of paddy ricefields.

Implementing and Perfecting the Production Responsibility System in Fish Cultivation

The development of cultivated fish production during the last 2 years is mainly the result of the policy and responsibility system that mobilized the people's enthusiasm. The Hengyang Prefecture established the production responsibility for fish cultivation in three stages of development. The first stage was the development from lacking management for a long period to assigning permanent and special personnel to feed and cultivate fish. The collective proposed production goals, and the commune members engaged in fish cultivation and equally divided the labor. Those with outstanding production records after democratic evaluation were given appropriate rewards at the year's end. The second stage was marked by the initial implementation of linking production with remuneration. The popular form was to assign special personnel to contract the work, several quotas were established for rewards and punishment, the proportion of rewards and punishment was generally not large. The third stage was marked by open bidding for contracts instead of cadres assigning special personnel to contract the work on the basis of the several established quotas. Most contracted work was fully rewarded for completion or fully punished for failure. The specific makeup of the three stages is in fact the three main forms at present. In addition, there is another major form of pure gain contract (big contract). The contractor submits a definite amount of product or cash each year according to the contract and is responsible for profit and loss while the collective does not exercise any control. The main forms of fish cultivation in other regions are mostly one of these four types. Regardless of which form, they all mobilize the enthusiasm of the producers. Increasing the yield benefits the collective and the individual. For example, the Guanshan Brigade of Dongshan Commune in Huarong County has 77 mu of ponds. Before 1977, per mu yield was only 20 jin. Since 1978 when production was contracted, increased yields were realized year after year. In 1980, the total yield reached 24,700 jin, per mu yield was 320 jin, an increase of more than 14 times over 1977.

Similar cases have occurred in every county. In the past, cultivation of fish in ponds made no progress over a long period, average per mu yield always stayed below 100 jin. Even after some units with better production reached 200 to 300 jin, the yield still lingered without increasing. But as soon as the production responsibility system was implemented, water remained water but the yield changed. The situation of units with protracted low yields suddenly changed and the units with lingering production also advanced one big step.

Many cases show that implementing the responsibility system in fish cultivation and production is a policy that is extensively supported by the masses. But, because

of the constraints of the leftist ideology for many years, the basic level cadres and masses still hold from habit various influence and ideological worries; they fear policy changes and fear the emergence of a wide gap between the rich and the poor. Especially in regions where the foundation of fish cultivation is poor, because of lack of experience, too low or too high basic quantities of contracted production easily result in the emergence of large rewards or severe punishments. Therefore, at some places, some problems exist in implementation. For example, some brigade cadres are inconsistent and do not fulfill contracts. Some fish cultivating commune members who receive more rewards in a year do not dare to accept the contract the next year, or are not able to continue to contract for the work, instead they ask for less rewards or use their rewards to invite others to banquets or buy television sets as gifts for the collective. There are also other commune members who are jealous of the rich and oppose fish cultivating commune members who continue contracting for the work.

Family Cultivation of Fish Is a New Emerging Force

Urged by the policy of the party Central Committee to encourage commune members to develop family sidelines, fish cultivation by commune member families has developed very rapidly. In some regions, family cultivation of fish has already become an important supplementary part of freshwater cultivation and production. Last year, family cultivation of fish in Hubei Province had already developed to 256,800 families, constituting 3.2 percent of the total number of farm families. In Hunan Province, statistics for the first quarter of this year showed that the area for the cultivation of fish by families constituted 2.5 percent of the area of ponds used for cultivation.

Developing family cultivation of fish is very significant in increasing the income of commune members and increasing the quantity of commercial commodities. But, it is different from hog-raising and fowl-raising, both of which require large areas and sufficient water sources and they are not enterprises that can be carried on in all regions or that can be operated by all farm families. Therefore, in development, measures must be suited to local circumstances and attention must also be paid to unified planning and arrangement by the collective. In lake regions where there is more land and water surface, the development will be fast. In hilly regions where there is less land and water surface, development is slow. Even in regions where development is fast, actual situations also differ. Jiangling County basically cultivates fish by digging ponds in private plots. Huarong County basically divides waste ditches not utilized by the collective among families for rebuilding and utilization. These situations, besides being related to the size of the population, land and water surface, are also related to the level of utilization at present of the water surface at each locality and the foundation of production of fish cultivation. In regions where the conditions are favorable, fish cultivation should be allowed to develop without limitations, and commune members should be actively encouraged to develop family fish cultivation. In regions where there is less land and water surface, fish cultivation should not be overly emphasized.

Conscientiously Solve the Actual Problems in Cultivation

(1) Continuing to correct the influence of the leftist mistakes and placing fishery in a position it should occupy is still the first problem. Now, the neglect of fish

cultivation and production has indeed been changed. But the degree of understanding by each locality, the degree of emphasis and the determination vary greatly. Nationally, there are still some provinces and regions that until now have not been lined up for such work. The lower echelon comrades have asked the leading party and administrative departments truly to emphasize the utilization of water surfaces in the same way they have emphasized cultivated land and to grasp farm village cultivation of fish in the same way they have grasped the cultivation of foods grains and hogs.

(2) We must strengthen guidance and training in fish cultivation techniques. Our nation's farm villages have a long history and rich experience in fish cultivation. But, among the broad number of farm villages throughout the nation, the basic knowledge of production is still lacking. Now, that the trend of developing fish cultivation in farm villages is strong, the masses crave for technical guidance. How to create more effective methods to do this work well under presently available manpower conditions and financially allowable conditions is still a problem that requires study and solution.

(3) The supply of superior breeds must be well organized. Since the 1950's when artificial propagation techniques of domesticated fish made its breakthrough, incubation of fish fry has become basically popular throughout the nation. The present problem is a widespread degeneration of species, mixed breeds and the concentrated use of only a few species in actual production, few specifications and poor quality because of uncontrolled development and the lack of planning and management. In the future, specialization and fixed point production and supply of propagation of fish fry and allowing the production units to cultivate their own breeds of fish should gradually be implemented. The state should grasp well the major superior breeds and the original breed bases, and it also should help the few counties that have a definite water surface for fish cultivation, but at present still cannot propagate fish fry, to establish fish fry breeding farms and stations. We should strive to change the present situation of cultivating whatever is released in most of the water surfaces for fish cultivation and we should realize a rational combination of species and after several years of efforts cultivation of superior breeds and large species.

(4) We must grasp well rebuilding of ponds. For many years, construction of ponds has been neglected. A small part of the original ponds has been filled, and most ponds have not been repaired for many years. The production team should be mobilized to rebuild ponds in stages so that the water is deep, the banks are wide and the ponds can be drained and irrigated. These will be a benefit in storing more water to resist drought and also improving conditions for fish cultivation, killing two birds with one stone.

9296
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MOUNTAINS DESIGNATED TO MEET PERSONAL NEEDS

OW132153 Beijing XINHUA Domestic Service in Chinese 0059 GMT 13 Nov 81

[Report by XINHUA correspondent Shen Yuandi]

[Excerpts] Beijing, 13 Nov (XINHUA)--Efforts have been made to stabilize the ownership of mountains and forests, to designate mountains to meet personal needs and to establish the responsibility system in forestry (hereinafter, these are called "three things unchangeable" for short) in 1,446 counties of the country's 26 provinces and autonomous regions.

As a result of the efforts to realize the "three things unchangeable," the enthusiasm of the cadres and masses in growing saplings and planting trees have been greatly aroused. In Shandong Province's Laiwu County where a better job has been done in this regard, more than 40,000 able-bodied persons prepared over 40,000 mu of land for planting trees during this year's rainy season, overfulfilling their plan by more than 100 percent.

In Neijiang Prefecture, Sinchuan Province, flood lands that are suitable for planting trees have been assigned to households for this purpose. The prefecture has issued a regulation under which peasants grow saplings and plant trees on those lands and enjoy the benefits from their such effort. Then, more than 150,000 jin of cypress, eucalyptus and other tree seeds were quickly gathered. After fulfilling their original plans for growing saplings, peasants in the prefecture grew additional saplings on 10,000 mu of land.

In Shaanxi Province, 4.2 million mu of mountains (including waste beaches) were designated as mountains for meeting personal needs, and trees were planted on 1 million mu of them in the same year.

As a result of the efforts to realize the "three things unchangeable," excessive felling of trees has been effectively stopped and the protection and management of forests have been strengthened. Meanwhile, some localities have strengthened their management of forests in accordance with the law, have promptly and severely punished those committing crimes in destroying forests and have hit hard at speculators and profiteers.

In the efforts to make the "three things unchangeable," many localities have seriously handled disputes over mountain forests, thus promoting stability and unity. According to preliminary statistics by eight provinces, more than 58,400 disputes over the ownership of mountain forests have been handled.

According to incomplete statistics, 13 provinces and autonomous regions have sent work teams of more than 165,000 persons to basic-level units to help them realize the "three things unchangeable."

However, there are still some problems in this regard.

1. The development of this work is uneven. A few localities have not yet made experiments in this regard; some localities have done so but have not promptly popularized their experiences.

2. Relevant policies are not accurately grasped. A considerable number of localities are too strict in designating mountains to meet personal needs, and some even do not designate mountains to meet personal needs at all. But some others are too generous in doing so and give commune members whatever mountains they want for personal needs.

3. A few localities only give vague, general directions but fail to provide specific organizational leadership in this regard, and they perform this work perfunctorily.

4. Some localities only pay attention to stabilizing the ownership of mountains and forests by issuing title certificates but neglect the practice of the system of responsibility in forestry. These problems are attracting the attention of departments concerned.

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BRIEFS

MU US DESERT TRANSFORMATION--Hohhot, 3 Nov (XINHUA)--China's Agricultural Commission has decided to transform the Mu Us Desert and semidesert area which runs through the Inner Mongolia and Ningxia Hui Autonomous regions and Shaanxi Province and turn it into forest and pastureland by the end of 1990, according to a preparatory meeting held recently in Uxin Banner, a county in Inner Mongolia. The 60,000 square kilometer area is inhabited by 1.2 million Mongolian, Han and Hui people. The transformation is a part of the great shelterbelt project across northwest, north and northeast China. The Mu Us has a fair amount of rainfall and in the past 20 years and more, the local people have done some transforming through collective effort by planting trees around their villages and growing some crops. The specialists who attended the meeting have put forward a program of standards and requirements for transforming the desert and semidesert area. There are four such major areas in China, the Mu Us being one. The detailed plans will be worked out by the end of 1983. Funds for transformation will be allocated by the state. [Text] [Beijing XINHUA in English 0751 GMT 3 Nov 81 OW]

CSO: 4020/29

BRIEFS

SUXIAN PREFECTURE HARVEST--Suxian Prefecture, Anhui, had reaped an unprecedented all-round good harvest this year. The prefecture's total grain output may reach 5.16 billion jin, an increase of more than 1 billion jin or 24.2 percent over the last year. Output of oil-bearing crops totals 2.42 million dan; cotton, 733,600 dan; jute and ambary hemp, 755,800 dan; topping the last year by 65.2, 18.7 and 25.8 percent respectively. Output of flue-cured tobacco totals more than 450,000 dan, an increase of 440 percent over last year. Output of silkworm cocoons totals 4,833 dan, and fruits total 33.5 million jin, an increase of 35.6 percent and 13 percent respectively over last year. The number of draft animals is 581,200 this year, or 16 percent more than last year. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 18 Nov 81 OW]

INDUSTRIAL CROPS--Anhui Province has reaped an all-round bumper harvest of industrial crops this year. The province's total output of oil-bearing crops, tea, flue-cured tobacco, jute and ambari hemp are all records. This year, this province's total output of rapeseed reached 1.3 billion jin, 1.6 times greater than last year. Production of peanuts, soya beans and sesame has also greatly increased. Total output of tea is 700,000 dan, 60,000 dan more than last year. Production of flue-cured tobacco this year is some 2 times greater than last year. Total output of cotton has increased by 15.8 percent. Output of jute and ambari hemp is 4 million dan, 43 percent more than last year and is the highest production figure in the whole country. As the province has reaped a bumper harvest, it has overfulfilled its quotas for procuring rapeseed, tea and flue-cured tobacco. By the middle of October, the amount of cotton, jute and ambari hemp procured was 1.7 times and 37 percent respectively more than in the corresponding period last year. [HK030707 Beijing ZHONGGUO XINWEN SHE in Chinese [no time given] 24 Oct 81 HK] Because of a bumper tobacco harvest, this year's production of flue-cured tobacco will be 2.11 times more than last year. Total jute and ambari hemp production this year surpasses last year's by some 1 million dan. Fruit production is expected to increase 9.7 percent compared with last year. [OW291215 Hefei Anhui Provincial Service in Mandarin 1100 GMT 28 Oct 81 OW]

CSO: 4007/92

BRIEFS

AGRICULTURAL PRODUCTS PROCUREMENT--The rural areas in Beijing Municipality have developed production of agricultural and sideline products this year despite natural calamities, because they seriously implemented the party policies. From January to September, the total procurement of agricultural and sideline products amounted to 570 million yuan, an increase of 27.8 percent over the corresponding period last year. According to statistics, 700 million jin of grain was procured, showing an increase of 300 percent; 289 million jin of pork was procured, an increase of 10.4 percent; 45.64 million jin of eggs was procured, an increase of 21 percent; 7,064 goats were procured, an increase of 190 percent; and 1,4 billion jin of fresh vegetables were procured, an increase of 7.7 percent over the corresponding period last year. Procurement of other sideline products such as fruit also increased. [Beijing City Service in Mandarin 2300 GMT 18 Oct 81 HK]

CSO: 4007/92

BRIEFS

TEA PROCUREMENT--As of the end of October, Fujian Province had procured over 438,000 dan of tea, or 8 percent more than this year's procurement plan. This represented an increase of 33,000 dan over the same period last year. This year, party committees and governments at various levels in Fujian Province attached particular attention to tea production. With the implementation of the production responsibility system in most of the tea-producing communes and production brigades in the province, production enthusiasm of the tea peasants has been greatly boosted. [OW111454 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 9 Nov 81 OW]

DATIAN COUNTY GRAIN HARVEST--Datian County, Fujian, has reaped a good grain harvest this year despite natural disasters. The county's total grain output this year is more than 207 million jin and average per mu grain yield reached 965 jin. Both are new records.[Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 17 Nov 81 OW]

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FACTORS TO BE CONSIDERED IN UNDERTAKING MAJOR IMPROVEMENTS OF FIELDS EXPLAINED

Guangzhou GUANGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese
No 5, 8 Sep 81 pp 21-22

[Article by Huang Shengchi [7806 5116 7459]: "An Exploration of How to Evaluate Economic Results in the Transformation of Low Yield Fields"]

[Text] Guangdong Province has 15 million mu of low yield rice paddies with yields of less than 800 jin per mu for which a very great potential for increased yields through improvements exists. In 1980, the province made improvement of low yield fields the main thrust of farmland capital construction, launching planned and focused work for the transformation of low yield fields. By transformation of low yields is meant comprehensive renovation of existing fields, and change in their production conditions to attain the goal of consistently high yields. This was done by the people themselves with government assistance. This required extreme attention to the economic results derived from transformation of low yield fields so that the peasants would see from actual results achieved that changes in production conditions are essential to production, and that they are economically worthwhile. But how should one go about transforming low yield fields to get rather good economic results? In the following, problems in this regard are discussed.

(1) Principles and Requirements For the Evaluation of Economic Results of the Transformation of Low Yield Fields

In deciding the various technical measures to be taken for the transformation of low yield fields, it is necessary, first of all, to compare and study the conflicting relationships between results and conditions, results and expenditures in transforming low yield fields in order to determine the optimum combination of programs to be used.

As far as the conflicting relationship between results and conditions is concerned, in order that transformation of low yield fields might produce good results in increased yields and increased income, it is necessary to adopt technical measures to change the conditions of production. Change in production conditions requires investment. Consequently in deciding which technical measures to take, one cannot stray from certain natural conditions and economic conditions. For example, standards for some measures are high and these measures can produce quite good economic results, but the investment required is great and the masses have only limited capabilities. Once the transformation of low yield fields had been completed, the investment cannot be recouped for several years, so such methods cannot be used for the time being. Only when investment is small, benefits quick, and small measures used to produce large results will the peasants accept them.

In the case of the conflicting relationship between results and expenditure, by expenditure is meant expenditure of labor. Settling the conflict in relationship between results and expenditure means minimum expenditure of labor to achieve maximum economic benefit. Thus, on the question of land use following transformation of low yield fields, there is a difference between growing single crops and diversified crops. In my view, following transformation of low yield fields, the crop pattern should not be one of grain only, but rather the development of both grain production and adaptation of general methods to local situations for the development of sugarcane, mulberry, fruit, fish, and forests in diversification. This will both develop commodity production, increasing output and earnings, and transform the ecological environment for better use of land rescurces. Its economic benefits will be fairly great.

On the basis of the foregoing principles and methods for evaluating economic benefits resulting from transformation of low yield fields, a brief explanation of the ingredients and criteria for evaluating the economic results of the transformation of low yield fields is provided as follows: 1. The ingredients include: (1) Seeing whether fairly large growth occurs in output and output value of farm products and in net earnings received from them. (2) Does an increase in output really occur in the same year as the investment was made, and does it help advance readjustment in farm cropping patterns? (3) Are gains greater than expenditures? (4) Is the period of return on investment fairly short? 2. Specific criteria: (1) Grain yield increases in the first year following transformation of more than 150 jin per mu, and sugarcane yield increases of about 1 ton. (2) While assuring equitable increases in grain output, making sure that 1 out of every 10 mu (or 7 - 8 mu) of transformed land can be shifted to the growing of economic crops. (3) Combine the renovation of abandoned ponds and the construction of mountain ponds to raise fish with development of the livestock industry, using the pond foundations to grow economic crops for fairly high economic income. (4) Make sure that net income from increased production deriving from transformed land during the first year is close to expenditures for the transformation of the land, and make sure that funds invested will be recouped within 1 or 2 years. Are the above economic evaluation criteria too high? Let us take the example of actual work done in Foshan Prefecture during 1980 in the transformation of low yield fields. They grew paddy rice on 390,000 of the 420,000 mu that they had transformed, and produced an increased yield of 205 jin per mu. They grew sugarcane on 10,000 mu for an output totaling 40,000 tons, rotationally cropped 20,000 mu of peanuts for an output of 4 million tons; and 3,800 mu of newly built fishponds produced an increased output of 500,000 jin of pondfish. Calculating at list price the increased output of rice, sugarcane, peanuts, and pondfish alone, income totaled 13.14 million yuan, a 7.63 million yuan increase over the previous year. Expenses during 1980 for the transformation of the low yield fields had been 7 million yuan, so they completely recouped their investment in a single year.

(2) The Problem of Selecting the Best of Two Types of Combined Technical Plans

There are two types of combined technical plans for the transformation of low yield fields. The first type is the combined technical plan for the methods of renovation to be used in changing production conditions. The second type if the combined technical plan for methods of making sensible use of the land once the low yield fields have been transformed.

Let us talk about the first type first. Transformation of low yield fields entails the selection of specific renovation methods to perfect the farmland production system, improving and creating a fine ecological environment in the farmland material cycle so that small measures can produce large results. Therefore, in the selection of renovation methods to be used, it is necessary to keep in mind the principle of change in production conditions and small investment for rapid and good results. This is the fundamental requirement in making the best selection in the first type of combined technical plan. For example, in transforming mountain sinkhole fields, sometimes only a single thing is done such as making a ditch to drain away excess water, or making "three ditches," or leveling the land and digging large earthworks, but increases in yields from such activity are not striking. Another method is comprehensive renovation whereby something is done about water, soil, fertility, and both mountain tops and mountain bottoms. When production conditions are changed and the production system perfected, results in increased yields are fairly remarkable. In the Honghua Production Team of Fucheng Commune, Yu'nan County, for example, 267 mu of cold low-lying fields with deep mud in them were located in 11 mountain sinkholes, producing yields of only slightly more than 500 jin of paddy per mu. For the past several years they have made comprehensive renovation of these sinkholes using the method of "one pond, three ditches, one manure shed, and two farms (hog farm, fruit farm). Throughout the production team, seven small mountain ponds were built for use both in raising fish and for irrigation. "Three ditches" were made in the mountain sinkhole fields, totaling more than 10,000 meters. At the head of the fields in the 11 mountain sinkholes, 13 manure sheds or manure pits were built. Three pigpens were built, and in out-of-way mountain areas, in "three ditches" with transformed soil, and at the base of ditches 10,225 fruit trees of various kinds were planted. Control of the fields and control of the mountain were combined. At the bottom of the mountain, water was controlled and the soil transformed, while at the top of the mountain both water and soil were conserved. On 2,000 mu of mountain land were planted 1,000 mu of dayesuo [1129 0673 4792], 500 mu of yugui [3768 2710], and 150 mu of bamboo. After several years of comprehensive renovation, in 1980, the production team had yields of 1,150 jin per mu for the whole year, a 90 jin increase over 1979. Collective distributions averaged 290 yuan per capita, each person receiving 117 yuan more than in 1979. These measures naturally required a certain investment of funds and expenditure of labor, but results were quite good.

Second, let us talk about the second type. This plan is the study of how to observe the economic benefits deriving from use of rational use of land techniques. Once low yield fields have been transferred, there are various technical plans for use of the soil. One is a plan of sole growing of grain; another is the adaptation of general methods to local situation for a combination of the growing of grain and of economic crops. For example, the Fifth Production Team of Xiner Production Brigade, Baijiao Commune, Doumen County planted nothing but grain following transformation of its low yield fields. Yields fluctuated around 800 jin per mu, and distributions averaged somewhat more than 50 yuan per capita. In 1980, the team undertook a combination of transformation of low yield fields and readjustment of crop patterns. Of the teams' 470 mu of cultivated land, 290 mu was covered with river mud, 23 mu was used for newly dug fishponds, and 50 mu was converted to the growing of sugarcane. Grain yields increased by 343 jin per mu over 1979 for a total increase in output of 110,000 jin, and sugarcane production increased by 1.1 ton pew jin. Fishpond output increased 4,000 jin. Distributions per capita averaged 188 yuan, a 133 yuan increase over 1979. Farming production costs amounted to 24,000 yuan, 10,000 yuan less than in 1979, and net income amounted to 34,000 yuan, 13,000 yuan more than in 1979. Expenses incurred in transformation of the low yield fields

amounted to 11,000 yuan, more being gained than spent within the same year for a reconciliation of the conflict between expenditures and benefits. Thus it can be seen that once low yield fields have been transformed, comprehensive operation can make better use of the land and is a combined technical plan that merits adoption.

If transformation of low yield fields is to achieve decent economic benefits, sensible plans and meansures must be used. Experiences must be summarized on renovation measures, and the best selection made of combined technical plans.

9432
CSO: 4007/65

BRIEFS

FIXED ASSETS CHECK--More than 70 percent of communes and brigades in the Guangdong rural areas have completed clearing up and checking of fixed assets. Since the cooperativization of agriculture in our province, communes and brigades have installed quite a number of fixed assets. During the chaotic 10 years, the effective management system was sabotaged. Since responsibility systems fixing farm output quotas for each household were implemented, fixed assets have been indiscriminately occupied and distributed. The Guangdong Provincial CCP Committee and the people's government held: The various kinds of responsibility systems implemented in the rural areas are for the purpose of readjusting and reforming the management of the collective economy. They are not meant to change the system of ownership. We must strengthen, but not weaken, management over collective fixed assets. Since September 1980, professional core groups have been trained to take care of the fixed assets. The checking groups have done some meticulous work and they have set up systems to take care of, repair and use the fixed assets. According to the statistics of 19 trial-point communes, the funds used for repairing agricultural machinery have decreased by approximately 9 percent. [Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 3 Nov 81 HK]

PRODUCTION RESUMED--Guangzhou, 4 Nov (XINHUA)--Normal production has resumed in Yangchun and Yangjiang counties in southwestern Guangdong Province, which was severely hit by heavy rains between September 27 and October 8, according to provincial authorities. Accommodations have been provided to 8,200 homeless flood victims in Yangchun County. In an effort to reduce losses, peasants are now repairing breached dikes, draining excessive water from paddy rice fields, straightening rice shoots and applying manure. In cases where late rice was seriously damaged, peasants have extended land planted to winter crops, such as wheat, sweet potatoes, potatoes, peas and broad beans. Yangjiang County planted an additional 4,000 hectares in wheat. More than 53,000 hectares of farmland and 1,000 villages in the two counties were submerged following two torrential rains that dumped over 700 millimeters of water. [OW041233 Beijing XINHUA in English 0701 GMT 4 Nov 81 OW]

CSO: 4007/92

BRIEFS

AUTUMN HARVEST--By the end of October, Guangxi region had reaped mid-season and late rice from some 2.8 million mu, some 400,000 mu more than in the corresponding period last year. The region has reaped late corn from 260,000 mu, 160,000 mu more than in the same period last year. Liuzhou Prefecture has now reaped late rice from some 53,000 mu. Jingxi County has now reaped late rice on some 130,000 mu, some 101,000 mu more than in the corresponding period last year. [Nanning Guangxi Regional Service in Mandarin 1100 GMT 4 Nov 81 HK]

CSO: 4007/92

BRIEFS

LATE AUTUMN FARMING--Despite drought, all rural areas in Guizhou Province have crash-sown late fall crops, including potatoes, on 1.022 million mu, 2 and 1/2 times greater than last year's sown areas. This province has suffered extraordinarily big drought and the state council appropriated special funds of 5 million yuan for fighting drought and sowing seeds. Anshun Prefecture has overfulfilled its quota for sowing late fall crops by 4.2 percent and sown late fall crops on 125,100 mu. Tongren Prefecture which is a seriously stricken area has sown late fall crops on 70,400 mu. [HK030418 Guiyang Guizhou Provincial Service in Mandarin 2315 GMT 14 Oct 81 HK]

CSO: 4007/92

CAMPAIGN AGAINST RODENTS URGED

Increase in Numbers of Rodents

Shijiazhuang HEBEI RIBAO in Chinese 21 Sep 81 p 2

[Article by Dong Guiti [5516 2710 7344] and Zhang Shujian [1728 2579 0313]

[Text] A survey conducted by departments concerned shows a trend toward rather severe outbreaks of rats everywhere in Hebei Province this fall. Both the area and the density are larger than last year. At the present time all levels of government are in process of diligent implementation of the spirit of Provincial Rat Extermination Conference, are adopting measures, and launching a fall rat extermination campaign. The provincial government has called upon all prefectures to be sure to improve their understanding of rats, place rat extermination work on their agenda, earnestly strengthen leadership, and adopt effective measures to launch one or two mass rat extermination shock campaigns under the unified control of counties before the end of October.

Throughout Xian County vigorous efforts are underway to raise cats, and most recently 8,000 yuan has been collected for the purchase from northeastern China of 896 cats to be placed in each production brigade. This county has also encouraged brigades and communes to sign contracts for the raising of cats with commune members stipulating that: for each cat bought by the bridage collectively, a price of 5 yuan will be paid for, all other kittens reverting to the ownership of the household. Thanks to the careful attention of the County CCP Committee and the adoption of effective measures, cat raising is developing rapidly throughout the county. In Huanglupu Brigade of Benzhai Commune, in Tanzhuang Brigade in Nanhetou Commune, and in Shuiniudian Brigade in Shanglin Commune, virtually every household is raising a cat.

'RIBAO' Commentary

Shijiazhuang HEBEI RIBAO in Chinese 21 Sep 81 p 2

[Articl by Commentator]

[Text] During the past several years, quite a few prefectures have reported being overrun with rats. In some places, reckless use of extremely poisonous pesticides has killed off large numbers of the natural enemies of rats causing the rat menace to become worse. A survey shows the farmland area infested by rats last fall to have

been more than 15 million mu. This increased to more than 31 million mu this spring. Because of the strengthening of leadership in rat extermination since March, arousal of the masses, and use of comprehensive methods of prevention and control, the rat problem has been brought under control. This has played major role in assuring the safe growth of spring and summer crops. At the same time a preliminary survey of rat types has been done, and a group of backbone cadre has been trained in rat prevention and control techniques. In some counties, protection of cats and increase in the number of cats has shown definite progress.

Judging from the current situation, quite a few problems still exist in the province's rat extermination work. The greatest problem is that some places lack an understanding of the seriousness and danger posed by rats. The problem is not given sufficient attention; leadership is not strong; rat extermination is conducted in a very unbalanced way, and rate extermination techniques are not sufficiently well known. This situation must be changed rapidly. In the task of rat extermination, we positively may not be relaxed or negligent; we must continue to take matter firmly in hand, vigorously arouse the masses, and steadily and, without let up, practice elimination and control in an effort to bring rats under control throughout the province within 2 or 3 years. To this end, all levels of the party organization and government must bring to bear a high degree of attention to rats, handle is as an important task, do good organizational work, make specific people responsible, and have a specialized corps. The rat extermination of ordinary years must be combined with shock rat extermination. While teaching the masses routine rat extermination, several shock rat extermination campaigns concentrated at specific times should be conducted annually to control the spread of rats. Attention should be given to scientific rat extermination, with the plant protection stations in each county making forecasts on the rat situation one of their tasks, clearly designating persons responsible, taking prompt action on rat matters, issuing reports, directing local rat extermination work, and giving attention to the accumulation of scientific data. All levels of units concerned should give attention to technical training work, and the wide dissemination of rat extermination knowledge so that commune and brigade rodent extermination technicians can distinguish rat types, can ferret out rats, can prepare bait and set it out, and be able to direct the masses in rat extermination. It is also necessary to adhere to implementation of comprehensive programs of prevention and control, and adopt various measures for prevention and control through the adaptation of general methods to local situations, both vigorously spreading devices to exterminate rats and actively advocating the raising of cats to kill rats.

As an accompaniment to the launching of mass rat extermination work, each prefecture will inevitably summarize some good experiences and bring to the fore rat extermination activists. All jusrisdictions should promptly summarize and spread experiences, and make a point of giving recognition to good people who have done a good job in rat extermination work to promote solid, protracted development of rat extermination work. In order to make rat extermination work highly effective, all levels of scientific and technical departments, industries, business, sanitation, and cultural and educational departments concerned should work in close coordination and cooperation to exterminate rats.

9432
CSO: 4007/61

POINTERS GIVEN FOR SOWING WHEAT IN DRY CONDITIONS

Shijiazhuang HEBEI RIBAO in Chinese 2 Oct 81 p 1

[Article: "Overcome Fear of Difficulties To Do a Good Job of Fighting Drought to Plant Wheat. Comrades In Charge at Provincial Department of Agriculture Remarks on Problems in This Autumn's Fight Against Drought to Plant Wheat"]

[Text] Recently comrades in charge at the Provincial Department of Agriculture made some remarks about how to do a good job of fighting drought and planting wheat this autumn.

The comrades in charge at the Provincial Department of Agriculture said that the drought situation in the province's major wheat growing area is becoming increasingly severe. Most parts of the province have had either no rain or little rain since mid-August, and the drought situation in the major wheat growing area in the south central part of the province is particularly serious. This poses very great difficulties in planting a sufficient quantity of wheat on time, and in growing sturdy seedlings before the onset of winter. Therefore, leaders at all levels should go down to the grassroots levels and, on the basis of different kinds of problems existing in communes and brigades, do a good job of sparking ideological work to fit the situations. They must get a thorough understanding of the moisture situation field by field, use realities to indoctrinate cadres and the masses, and overcome the feeling of paralysis. In places where fear of difficulties is serious, they should organize a set of priorities for action on wells, ditches, pumps, and such water conservancy equipment and water lifting equipment, zero in on existing problems, recommending ways to solve them, and putting the solutions into effect one at a time. In drought stricken wheatfields that have shallow fresh water wells, the masses should be aroused and general methods adapted to local situations to make some vacuum [pump] wells, laotoule [5071 7333 3867], wells and radial wells to fight drought. Taking the attitude that one more mu watered is one more mu of grain strive to enlarge the irrigated area. In places where water resources are inadequate, but where drainage is rather good, slightly saline water may be scientifically used to water the soil. In places given to conservation in the use of water, guarding against water percolating from field furrows, and not using any flood irrigation.

The comrades in charge at the Provincial Department of Agriculture also said that in most parts of the province systems or responsibility for wheat production have already been put in place, at the production team level and this is an extremely favorable situation for doing a good job of fighting drought and growing wheat.

However, some production teams have not yet instituted such a system, and in some places after instituting large scale assignment of responsibilities, cadres have had nothing more to do with the matter. These problems directly impair the smooth development of the work of fighting drought and planting wheat. Each jurisdiction should therefore resolutely act in accordance with the spirit of the Provincial CCP Committee's 1981 "Notice About the General Promotion of a System of Responsibility Linking Compensation to Production of Wheat," giving further emphasis to institution of a system of responsibility for wheat production. Recently leadership comrades in the Provincial CCP Committee noted that everything possible should be done to plant wheat on time, and when putting into effect a system of responsibility for fields hurt the planting of wheat, the planting should be done first and the system instituted later. In addition, it is necessary to make full use of existing farm machines and enlarge as much as possible the area plowed and sown by machines so as to be able to plant more wheat on time. Places having the necessary water should place management of water conservation facilities and irrigation of the land under the unified management of production brigades or production teams, set up corresponding irrigation management systems, and institute "several fixed" systems of responsibility so that limited water resources can be used with maximum effectiveness for irrigation.

The comrades in charge at the Provincial Department of Agriculture said finally that efforts should focus intensely on the growing of full stands of sturdy wheat seedlings before the onset of winter, and a good job done in fighting drought to plant the wheat. As a result of the enduring drought in Hebei Province this year, the area of spring sown crops has declined, while the summer sown crop area has increased by more than 10 million mu over ordinary years. As a result, crops harvested in autumn will mature late, and there will be little time between the harvesting of one crop and the planting of another. This poses even greater difficulties for the planting of wheat on time. Thus, it will be necessary to harvest each plot as it ripens, and harvest corn that is on the verge of full ripening, letting it ripen later, using every possible means to create conditions for timely planting. In addition, planting should be done only when soil moisture is sufficient. This is essential to assure a full stand of sturdy seedlings. The masses have a saying that, "In the planting of wheat and in the autumn care of wheat, planting when there is sufficient soil moisture is the key." In actual practice, this means adherence to the adaptation of general methods to local situations. Where water conditions are good and where the land is cleared of the last crop early, the land should be plowed first, watered thoroughly, tilled and then planted. When planting has to be done right after the harvesting of the previous crop and there is no time for thorough watering, watering can be done on top of the stubble from the previous crop after which the land may be plowed, harrowed, and planted. When time is at a premium, in order to get the wheat planted on time, sowing may be done first and watering done afterward. In summary, there has to be sufficient soil moisture to assure a full stand of sturdy seedlings. In arid areas where water is insufficient, the land should be leveled as early as possible to preserve underground soil moisture and to save on surface water. Rush planting is then done to take advantage of soil moisture and assure a full stand. In addition, attention should be given to spreading sufficient base fertilizer and levelling the land carefully. Superior seeds should be selected. Attention should be given to prevention of underground insect pests and determined efforts made to win the battle against drought so that wheat can be planted in order to lay a good foundation for winning a bumper harvest during the following summer.

9432
CSO: 4007/61

BRIEFS

TANGSHAN UNDERGROUND WATER--Following 4 years of effort, the hydrology and geology contingent of the Hebei Provincial Bureau of Geology recently completed the task of municipal water supply hydrological and geological prospecting at Fengrun New District in Tangshan to provide ample underground water and a large amount of hydrologial and geological data for the reconstruction of the Tangshan municipal water supply, which was destroyed by a violent earthquake. The Fengrun New District project in Tangshan is the major project for the reconstruction of Tangshan. Beginning in 1977, the Hebei Provincial Hydrological and Geological Contingent carried out hydrological and geological examination, physical exploration, surveying, and long term observations in this new municipal district and an area of 390 kilometers around it. Within 150 square kilometers of this area, they prospected and conducted large bore water pumping tests, obtaining large amounts of scientific data and materials. Verified static reserves of underground water amount to about 3.6 billion tons; water quality is good; salinization, alkalinization, and mineralization is at a low level; the water contains no pollutants; and it can satisfy the needs of industrial and agricultural production and the people's livelihood at a rate of 180,000 tons per day. They also determined the laws governing the way in which the new district's underground water is replenished, its flow path, conditions under which it drains away, and changes in water level. They also analyzed reasons for regional decline in the water table, and they put forward constructive proposals and measures for rational development of underground water, and prevention of pollution of underground water. [Text] [Beijing GUANGMING RIBAO in Chinese 27 Oct 81 p 2] 9432

CSO: 4007/67

WANG LUMING REPORTS ON DISASTER-RELIEF WORK

SK190430 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 18 Nov 81

[Excerpts] According to our reporters, Comrade Wang Luming, secretary of the provincial CCP committee and deputy governor of the province, at a provincial experience exchange meeting on relieving disasters through production, urged the broad masses of cadres and people in disaster areas to display a revolutionary spirit of self-reliance and arduous struggle, do a better job in relieving disasters through production and try in every possible way to reap a bumper harvest of all crops next year.

Comrade Wang Luming delivered a speech at the provincial experience exchange meeting on 17 November. In his speech, Comrade Wang Luming first analyzed the seriousness of flooding and waterlogging in our province this year and talked about the pattern of disasters. He said: According to the pattern of periodic changes of droughts and waterlogging in our province, we may have entered a waterlogging period in the 1980's. Floods and waterlogging will increase. Our province has already had serious floods and waterlogging this year. It is predictable that the eastern part of our province will have a waterlogging problem next spring because fields in the eastern part were frozen by rain and snow last autumn. Discussing antidisaster measures is, fundamentally speaking, to figure out the regular pattern to prevent both droughts and waterlogging at the same time, enable different areas to concentrate on different problems and make preparations with construction projects, the ecology and agriculture taken into consideration. Only by so doing can we grasp the initiative in the antidisaster struggle.

Comrade Wang Luming said: Our province has 5 million mu of waterlogged lands, which requires us to make intense efforts to drain during the winter-spring period. Should we fail, we will be unable to sow the lands on time or do a good job in sowing work. Even worse, we might not be able to sow the lands at all. We should concentrate on drainage works in those areas where conditions permit. As for those areas [words indistinct], we should strive to drain the waterlogged lands as soon as they thaw next spring.

Many irrigation projects have been damaged by floods this year. We should adopt an over-all plan, take advantage of an opportune period in winter and concentrate on preparing all materials necessary for repairing flood-damaged projects which have high efficiency and need to be repaired immediately. This will mean repairing projects as soon as the lands thaw next year and enable them to play the role of draining waterlogged lands, irrigating and preventing floods.

CSO: 4007/92

BRIEFS

FLUE-CURED TOBACCO--In spite of floods, the 30,300 mu of flue-cured tobacco cultivated this year in Linkou County, Heilongjiang Province, are expected to yield a good harvest. Output is estimated at 80,000 dan, best in the province. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 28 Oct 81 SK]

SOYBEAN PRODUCTION--Harbin, 14 Nov (XINHUA)--The Songnen Plan in Heilongjiang Province has reaped a bumper harvest of soybeans this year. The total output is more than 2.5 billion jin or more than 20 percent increase over 1980. Hailun, Bayan and Binxian counties have each reaped more than 100 million jin of soybeans this year. [OW161153 Beijing XINHUA Domestic Service in Chinese 0015 GMT 14 Nov 81 OW]

FOOD PROCESSING--In the first 9 months of this year, grain and fat industrial enterprises throughout Heilongjiang Province made 33 million yuan of profits, an increase of 8.4 million yuan over the corresponding 1980 period. At the same time, the province processed 280 million jin of wheat more than in the corresponding 1980 period and processed 320 million jin of various oil-bearing seeds, twice that of the corresponding 1980 period. The province also produced 55 million jin of food and 7 million jin of oil and fat, a 10-million-yuan increase in profits for the enterprises. [Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 23 Oct 81 SK]

AFFORESTATION PROJECTS--By 28 October, 31 cities and counties in Heilongjiang Province had afforested 368,000 mu, 36.6 percent over the corresponding 1980 period. In early September the provincial forestry bureau allocated an extra 2.47 million yuan of loans to 25 cities and counties to help them build firewood and charcoal forests. [SK011002 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT [no day] Oct 81 SK]

SUGAR MILL OPERATION--Harbin, 8 Nov (XINHUA)--Two medium-sized sugar mills, the Baiquan and Yilan sugar mills, were recently put into operation in Heilongjiang, with an annual production capacity of 10,000 tons of sugar each. Since 1978, five new sugar mills have been built in the province. Five more are now under construction. [OW091217 Beijing XINHUA Domestic Service in Chinese 0023 GMT 8 Nov 81 OW]

DAIRY OUTPUT--Harbin, 27 Oct (XINHUA)--Heilongjiang Province, whose dairy production is one-fourth the country's total, produced 14,000 tons of milk powder, condensed milk, butter, and other dairy products between January and September this year, 37 percent more than in the same 1980 period, according to the provincial light industry bureau. The increase is due largely to the policy allowing individuals to raise milch cows and goats for their own profit and raising the purchasing price for fresh milk. Heilongjiang now has more than 70,000 milch cows, 30 percent more than at the end of last year. With 23 million yuan allocated by the provincial government since last year, 30 creameries have been technically updated and their equipment replaced. This has increased the province's daily fresh milk processing from 300 tons to 550 tons. [Text] [OW311205 Beijing XINHUA in English 0751 GMT 27 Oct 81 OW]

CSO: 4020/29

BRIEFS

WHEAT SOWING--Since 23 September, Henan Province has stepped up the sowing of wheat. By 9 October, the province had plowed 38.41 million mu and sown wheat seeds over 8.21 million mu. [HK291017 Zhengzhou Henan Provincial Service in Mandarin 1130 GMT 11 Oct 81 HK]

FOODSTUFF INDUSTRY FORUM--The Henan Provincial Commune and Brigade Enterprise Bureau held a forum on boosting the foodstuff industry. The forum studied the important instructions of the central leaders on promoting the foodstuff industry, set up plans and adopted appropriate measures to promote the foodstuff industry in Henan. The participants reviewed the development of the foodstuff industry in the province. At present, there are some 7,000 food processing plants, wineries and cigarette factories having some 100,000 workers. In 1980, the total output value reached some 200 million yuan, and more fine quality goods have been produced. However, there are still some problems. Some leaders do not have a sound understanding of the foodstuff industry, the measures adopted are not effective and some valuable resources are wasted. We should solve these problems seriously. In the light of the situation in our province, the forum set up plans to develop the production of meat, eggs and other major foodstuffs. The leading departments of commune and brigade enterprises at all levels must strengthen leadership over the foodstuff industry, seriously implement an economic management responsibility system, and make full use of the advantages of the local situation so as to produce more marketable goods. We must bring into full play the spirit of self-reliance and the spirit of building an enterprise through arduous effort, incessantly improve the quality and varieties of products so that the goods we produce will become more competitive on the market. [Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 31 Oct 81 HK]

CSO: 4007/92

BUMPER HARVEST ENCOURAGES EXPANDED RAPE CROP

Wuhan HUBEI RIBAO in Chinese 28 Sep 81 p 1

[Article: "Area Sown to Rape Throughout the Province Expanded By More Than 1 Million Mu Over Last Year"]

[Text] After a bumper rapeseed harvest in Hubei Province this year, the area that all jurisdictions in the province have planned for the sowing of rape this year has been expanded by more than 1 million mu over last year, the wetland area planted to rape increasing by more than one-half over last year, and the rape seedling nursery area increasing by more than 200,000 mu.

Hubei Province has had a bumper rapeseed harvest year after year for the past several years. As a result of their summary of experiences and analysis of the situation, all jurisdictions have concluded that the current rape production situation is a very good one. Jingzhou, Xianning, Xiaogan, Rangyang, and Yichang prefectures have let the situation be their guide. They have turned attention to the favorable opportunity, aroused the masses, continued readjustment of crop patterns, substantially stabilized the summer grain growing area, appropriately expanded the rape growing area, and have vigorously advocated and promoted the growing of rape in wetlands. At the same time, they have further perfected the system of responsibility for rape production. Right now in every jurisdiction throughout the province, rape sowing plans have been put into effect in fields and with the workforce; techniques for increased yields have been firmly taken in hand; and leveling of the land and growing of seedlings in nursery beds has been done to grow large and sturdy plants. The area throughout the province devoted to the growing of seedlings totals more than 800,000 mu, and the area for transplanting of rape amounts to 70 percent of the area planned for rape, 1 million mu more than last year.

9432
CSO: 4007/61

BRIEFS

MALE-STERILE HYBRID RICE--A fine crop of male-sterile hybird rice seeds has been harvested this year in Hubei Province. Figures as of early September from the Provincial Seed Company show the area of hybrid rice parent pair propagation in the province to have been 4,888 mu this year for a total output of 400,000 jin of male-sterile seeds, 244,000 jin more than in 1980 and one and one-half fold increase. Male-sterile rice yields were 80.1 jin per mu, an all time high for the province since it began to grow hybrid rice. The bumper crop of male-sterile seeds has layed a foundation for the speedy revival and development of hybrid rice in the province. [Text] [Wuhan HUBEI RIBAO in Chinese 28 Sep 81 p 1] 9432

CSO: 4007/16

BRIEFS

INDUSTRIAL CROPS--Hunan has reaped a bumper harvest of industrial crops this year. As of 10 October, the province had procured 1.26 million dan of flue-cured tobacco, an increase of 520,000 dan over last year. The province has also procured 710,000 dan of cotton. [OW231045 Beijing Domestic Service in Mandarin 2230 GMT 20 Oct 81 OW]

LATE RICE REAPING--By 4 November, the rural areas in Hunan Province had crash-reaped late rice on 44 percent of the 30 million mu to be reaped. Since the middle of October, it has been cloudy and drizzly and very windy occasionally. This may cause very big losses to the ripe late rice that is waiting to be reaped. In such circumstances, everywhere, crash-reaping late rice is regarded as the current central task of the rural areas. By the end of October, Changde Prefecture had reaped late rice on 61 percent of the total area sown to late rice. [Changsha Hunan Provincial Service in Mandarin 2330 GMT 5 Nov 81 HK]

HOUSEHOLD INCOMES--The Hunan Provincial Statistics Bureau conducted a sample survey of the income of 600 households of commune members in 20 counties. The investigation revealed that the per capita income in the first half of this year was 60.67 yuan in cash, 82 percent more than in the corresponding period last year. The increase of peasants' cash income was the result of further implementing the rural economic policies, establishing many forms of production responsibility systems and promoting production. According to statistics, the per capita income of the households of commune members from sideline occupations in the first half of this year was 41.59 yuan, which accounted for 68.5 percent of their total income and was 95.6 percent more than in the corresponding period last year. Each person of the 600 households spent an average of 55.12 yuan on commodities in the first half of this year, which was 93.1 percent more than in the same period last year. [HK040430 Changsha Hunan Provincial Service in Mandarin 2300 GMT 24 Oct 81 HK]

CSO: 4007/92

BRIEFS

CORN HARVEST--Jiangsu Province this year reaped a bumper harvest from its 6 million mu of spring and summer corn. Per-unit yield and total output in four prefectures increased by a wide margin. Total corn output in Xuzhou Prefecture topped last year's by more than 70 percent. According to statistics, the province's spring and summer corn output exceeded 2.88 million jin, topping last year's by more than 430 million jin and setting an all-time high record. In Huaiyin, Yancheng and Nantong prefectures, although the corn acreage was some 235,000 mu less than last year, total output topped last year's by more than 10 percent. [OW201125 Nanjing XINHUA RIBAO in Chinese 9 Oct 81 p 1 OW]

COTTON PURCHASE--As of 5 November, Jiangsu has purchased over 6.36 million dan of ginned cotton from the state, a 190-percent increase over the same period last year. [OW131323 Nanjing Jiangsu Provincial Service in Mandarin 2300 GMT 10 Nov 81 OW]

AGRICULTURAL PRODUCTION--Nanjing, 14 Nov (XINHUA)--As a result of the implementation of the production responsibility system, the more than 8 million peasants in Huaiyin Prefecture, Jiangsu Province, have won a very good harvest and earned more income this year, thus becoming more prosperous than ever. The targets of total grain production and per-capita income from distribution originally set for 1985--namely, 7.5 billion jin and 80 yuan respectively--have been met this year. Compared with last year, grain output this year has increased by some 800 million jin, cotton production by 100,000 dan and silkworm cocoon production by nearly 10,000 dan. Fruit production has broken the 1 million dan mark. Income distributed to each individual averages more than 86 yuan, showing a 23-yuan increase over last year. [Beijing XINHUA Domestic Service in Chinese 0144 GMT 14 Nov 81 OW]

JIANGSU COUNTY HARVESTS--Nanjing, 19 Nov (XINHUA)--Jiangsu's Sihong County has reaped record harvests of grain and peanuts this year. Of the 80 million jin peanuts harvested, 60 million have been sold to the state resulting in an average of 40 yuan per capita income to the county people. The county has harvested 650 million jin of grain, topping last year's output by nearly 30 percent. In the past, the county had to buy 20 to 30 million jin of grain annually from the state-controlled market. This year the county has sold some 50 million jin grain to the state. The per capital income has increased from last year's 42 59 110 yuan this year. [OW221441 Beijing XINHUA Domestic Service in Chinese 0025 GMT 19 Nov 81]

JIANGSU PEANUT PROCUREMENT--As of 10 November, Jiangsu Province had procured 60 million jin of peanut kernel, an increase of more than 100 percent over the same period last year. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 21 Nov 81 OW]

CSO: 4007/94

BRIEFS

MINOR AUTUMN HARVEST--The Jiangxi Provincial People's Government recently issued a circular calling on all places to organize the minor autumn harvest well and in good time to gather in various kinds of wild plant resources. There are plenty of wild fruits, oil-bearing crops, starch and fiber plants in the province that can be harvested and used. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 8 Nov 81 OW]

JIANGXI COUNTY COTTON OUTPUT--Jiangxi's Gaoan County planted 98,000 mu of cotton this year. Total output rose 17.3 percent over last year. By 15 November, the county had procured 29,000 dan of cotton. [OW231427 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 20 Nov 81]

CSO: 4007/94

BRIEFS

DIVERSIFIED ECONOMY--Jilin Province has greatly developed its diversified economy. This year it planted 5,398,000 mu of cash crops, 15 percent more than in 1980. Of the total mu of cash crops planted, 3,589,000 mu were sown to oil-bearing crops and 938,000 mu to beets, 73.9 and 3.1 percent more than in 1980 respectively. Jilin now has 5,928,911 head of pigs and 1,897,000 head of sheep, 71,620 and 130,000 more than in the corresponding 1980 period respectively. As calculated by the end of June, Jilin's output value for its commune- and brigade-run enterprises was 350 million yuan, 8.7 percent greater than in the corresponding 1980 period. [SK250226 Changchun Jilin Provincial Service in Mandarin 1100 GMT 22 Oct 81 SK]

AGRICULTURAL PRODUCTION--Changchun, 31 Oct (XINHUA)--The Jilin Provincial CCP Committee and the provincial people's government made a decision in 1979 to readjust the agricultural structure and have achieved good results. Total output of grain and soybean in 1979 and 1980 increased by 7.3 percent over that of the previous 2 years, while total output of oil-bearing crops increased by 76.6 percent and total output of sugarbeet increased by 109 percent. The total value of agricultural output in 1979 and 1980 increased by 8.8 percent as compared with 1977 and 1978 and the average income of peasants rose by 21.6 percent. In addition, the total value of forestry, livestock breeding, sideline occupations and fishery output in 1978 was 925 million yuan and rose to 1.2 billion yuan in 1980. [Beijing XINHUA Domestic Service in Chinese 0132 GMT 31 Oct 81 OW]

RICE INSTITUTE--Changchun, 10 Nov (XINHUA)--A rice institute has been established in the Yanbian Korean Autonomous Prefecture, Jilin Province, which will engage in research on developing cold-resistant and early-maturing rice strains and new cultivation methods. The institute is headed by Liu Changyin, a rice breeding export on Korean nationality. Director Liu worked as an agricultural technician after graduation from senior middle school in 1956. Over the past 25 years, he has done thousands of hybridization experiments and developed seven rice strains suitable for cold and mountainous areas. These include the "Wanbao No. 6," "Wanbao No. 11" and "Changfeng." Antu County, Yanbian Prefecture in the Changbai Mountains has frost free period of only 80 days a year. Planting of these new strains there raised rice yields from 1.5 tons to 6 tons per hectare. [Excerpt] [Beijing XINHUA in English 0738 GMT 10 Nov 81 OW]

CSO: 4007/92

COMMENTARY URGES FARMLAND PROTECTION

SK160618 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 15 Nov 81

[Station commentary: "Treasure Every Inch of Land and Protect Farmland"]

[Excerpts] Liaoning is a province crowded with industrial cities. It has a large population but limited land. Farmland is valuable. However, with the development of socialist undertakings in recent years, the wasting of farmland in urban and rural construction has become serious, causing arable lands to severely decline. In the early days of the People's Republic, our province had 18.3 million people and 70 million mu of farmland; the average per capita farmland was 3.9 mu. By 1980, our province's population had grown to 34.86 million and the farmland had declined to 56.4 million mu; the average per capita farmland was 1.6 mu. In the past 31 years, our province's farmland decreased annually by 430,000 mu--equal to the farmland acreage of a medium-sized county. Our farmland is decreasing by 1,186 mu each day. This situation is not good at all.

There are many reasons for the decline in farmland. Apart from land appropriated for good reasons or washed away in floods, most of the farmland is arbitrarily appropriated for housing or other construction projects because of poor management. This has resulted in a serious waste of farmland. Appropriation of land for capital construction is serious. Some persons have appropriated land but did not make good use of it. Some appropriated land without authorization. Some communes and brigades recklessly appropriated tracts of farmland to establish tile and brick plants, thus damaging land resources. Some industrial and mining enterprises appropriated farmland for building staff living quarters under the pretext of building factories. Large tracts of land were appropriated for building houses for commune members in localities because no construction plans were formulated. Some illegally appropriated land for building large houses with a big garden and many rooms. Some even sold their old houses to buy new ones--a disguised form of selling their land.

Strengthening land management and strictly forbidding people to appropriate farmland is an urgent problem which merits the attention of all localities. First, we must educate the cadres and the masses to earnestly implement the policies on commandeering land issued by the State Council and the provincial people's government, take the over-all situation into account, treasure every inch of land and protect farmland.

Second, we must strictly enforce land commandeering procedures and ensure land is not wasted. With rapid improvement in the economic situation in rural areas, peasants will have money to build houses. It is estimated that about 300,000 peasant households in the province will build houses this year. About 1 million new houses covering 150,000 mu of land will be built. To cope with this new situation, all localities must formulate rural housing construction plans and stop recklessly building houses or appropriating land. No organs, mass organizations, enterprises and establishments are permitted to buy houses in the urban outskirts or from rural production teams and commune members and to rebuild these houses as residential buildings. Housing construction for urban residents or for staff members and workers of state organs, enterprises, establishments, industrial and mining enterprises should be included in the urban construction plan. No persons are allowed to appropriate rural production teams' land to build homes. Rural communes, brigades and commune members are not permitted to rent their land or to buy or sell their land in a disguised form. Appropriating and wasting no farmland benefits agricultural development and other construction undertakings.

CSO: 4007/92

GUO FENG REPORTS ON THRIVING RURAL SITUATION

OW150859 Beijing XINHUA Domestic Service in Chinese 0217 GMT 15 Nov 81

[Report by XINHUA correspondents Kong Qingju and Meng Xianjun]

[Excerpts] Shenyang, 15 Nov (XINHUA)--"In rural areas today, there are more farm and sideline products, more money in the hands of peasants, more surplus labor force and more surplus labor time." This is the deep impression gained by Guo Feng, first secretary of the Liaoning Provincial CCP Committee, when he conducted investigations recently in Haicheng, Yingkou and Gai counties. What should be done with the "four more's" in the rural areas? Leading party and government comrades at all levels should earnestly study the question and make vigorous efforts to find answers in order to further consolidate and develop the thriving rural situation.

By implementing various rural economic policies and various forms of production responsibility systems, Haicheng, Yingkou and Gai counties in northern Liaodong Peninsula have aroused the commune members' enthusiasm, increased labor productivity and thus found themselves with surplus labor forces. At present, surplus labor accounts for about one-third of the counties' total labor force.

This year the per capita income of the agricultural population from the collective economy averaged 172 yuan in the three counties. Adding income from household sideline production, the per capita income could reach more than 300 yuan.

After learning about these conditions, Guo Feng said: With more surplus labor force, localities with the available conditions can run industries and engage in commerce, service trades and transport. With more money, people can get married, build new houses and buy expensive goods. Therefore, the commercial departments should pay attention to the supply of industrial products to rural areas to meet the peasants' consumer demands. However, it is most important to guide the peasants to develop agricultural and sideline production in-depth and in-breadth. On the one hand, it is necessary to guide them to continue to do a good job in grain production; on the other hand, it is even more important to develop a diversified economy. Party organizations and cadres at all levels must guide the peasants to use their surplus funds, surplus labor force and labor time to develop a diversified economy and to expand reproduction.

On the question of "what should be done with more farm and sideline products," Guo Feng visited 20 communes in the three counties and talked with county and commune leading cadres, rural commercial workers and workers and staff members of commune- and brigade-run enterprises.

In view of the fact that farm and sideline products procurement channels are blocked in various places and to varying degrees, Guo Feng said: With the increased output of farm and sideline products, more of these products are being marketed and it is imperative that the processing industry catch up quickly. Judging from the prospects of the growing output of farm and sideline products, the orientation for the development of commune- and brigade-run enterprises should be mainly directed toward farm and sideline products processing.

CSO: 4007/92

BRIEFS

FIRE PREVENTION--A series of fire accidents occurred recently in rural areas of Liaoning Province. Two fire accidents which occurred in mid-October in communes in Kangping and Kaiyuan counties damaged over 12,000 jin of millet and Chinese sorghum. Another fire on 31 October in a commune in Nin County caused by poor management damaged over 160,000 jin of grain and 200,000 jin of rice straw. Other fires occurred in Shenyang, Fushun and Liaoyang municipalities, all causing unnecessary damages. To stop this, the provincial public security office issued a circular recently urging all public security organs to prevent such accidents in rural areas, investigate the causes of the fire, punish those who are derelict in their duty and cause fires and punish arsonists. [SK131116 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 11 Nov 81 SK]

BUMPER HARVEST--Changtu County in Liaoning Province reaped a bumper harvest this year. The county's grain output is estimated at 1.79 billion jin, an increase of 200 million jin over last year. The county's soybean output is estimated to be 130 million jin, an increase of 30 million jin over last year. The county's agricultural earnings will increase 16 percent; its commune members' per capita income will be 150 yuan, 30 yuan more than last year. Commodity grain handed over to the state will also increase by 180 million jin. [SK131300 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 12 Nov 81 SK]

CSO: 4007/92

BRIEFS

SOYBEAN OUTPUT--Nei Monggol Autonomous Region has reaped a bumper soybean harvest this year. According to statistics, the region is expected to attain over 320 million jin of soybeans this year, a 29.4 percent increase over the 1980 figure. It also increased its per-mu-yield from 96 jin in 1980 to 113 jin in 1981. [SK020557 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 1 Nov 81 SK]

BUCKWHEAT OUTPUT--Nei Monggol has reaped a bumper buckwheat harvest in 1981. The output is expected to be 148 million jin, 39.3 percent over 1980--the highest regional figure in over 10 years. The buckwheat sowing acreage in the region is 2.5 million mu, an increase of 4.4 percent over 1980. Bayannur League and Hohhot increased output by 110 percent and 150 percent respectively over that of 1980. [SK010939 Hohhet Nei Monggol Regional Service in Mandarin 1100 GMT 30 Oct 81 SK]

TOGTOH COUNTY GRAIN HARVEST--Togtoh County, Nei Monggol, overcame serious spring drought and autumn floods and reaped a good harvest. By 28 October, it had fulfilled its annual grain and oil-bearing seed procurement tasks. The county's grain output was 100 million jin. [SK050136 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 4 Nov 81 SK]

EGG PROCUREMENT--By the end of October, Nei Monggol had procured 23 million jin of fresh eggs, overfulfilling the annual plan by 49,000 jin. The region had sold 14 million jin of eggs to the state by the end of October, overfulfilling the annual plan by 2.5 million jin. [SK131148 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 11 Nov 81 SK]

BAYANNUR GRAIN HARVEST--Bayannur League in Nei Monggol has reaped a bumper harvest in 1981. According to statistics released by departments concerned, output of grain is expected to exceed 1 billion jin; oil-bearing crops, 160 million jin; and beets, 1 billion jin. The average per capita income of commune members from collective and domestic sideline occupations is estimated to be 170 yuan. [SK070734 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 6 Nov 81 SK]

ULANQAB GRAIN PROCUREMENT--By 10 November, Ulanqab League, Nei Monggol Autonomous Region, procured over 150 million jin of grains including wheat, naked oats, broom corn millet, buckwheat, glutinous millet and beans, a nearly 600 percent increase over the corresponding 1980 period. [SK171158 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 16 Nov 81 SK]

CSO: 4007/92

BRIEFS

WHEAT SOWING--Despite a serious drought, Shandong Province had nearly fulfilled its original wheat sowing plan by sowing 50 million mu of wheat as of 24 October. Since September, the province has had only an average of 20 mm of rainfall, a decline of almost 80 percent from previous years. To overcome the drought and fulfill the wheat cultivation plan in a timely manner, party committees and governments at all levels in the province have attached great importance to autumn sowing and sent many cadres to the forefront to help combat drought. The provincial CCP committee and government sent eight deputy secretaries and deputy governors to prefectures and counties most seriously affected by the drought. Over 77,000 cadres worked on the forefront alongside the peasants to combat the drought. According to statistics, the province mobilized about 20 million people to combat the drought and irrigated over 40 million mu of land. [SK290752 Jinan Shandong Provincial Service in Mandarin 2300 GMT 26 Oct 81 SK]

COTTON PROCUREMENT -- As of 23 October, Shandong Province procured some 5.43 million dan of ginned cotton, overfulfilling the annual plan by 2 percent and an increase of 22.8 percent over the corresponding 1980 period. [SK251420 Jinan Shandong Provincial Service in Mandarin 2300 GMT 24 Oct 81 SK]

TOBACCO PRODUCTION--Shandong Province expects a bumper harvest from this year's cultivation of its 1.3 million mu of tobacco, drought notwithstanding. The total output is estimated at 4.1 million dan, an increase of 1 million dan over the 1980 level. By 15 October, the province had procured 3.7 million dan of tobacco, 112 percent of the procurement plan. [SK250529 Jinan Shandong Provincial Service in Mandarin 2300 GMT 22 Oct 81 SK]

LIVESTOCK BREEDING--Jinan, 16 Nov (XINHUA)--As of the end of October, the number of Luxi [7627 6007] fine breed cattle in Dongping County, Shandong Province, reached more than 14,000 head, increasing by more than 2,400 head over the number in 1979. The number of Xiaoweihan [1420 1442 1383] sheep, also of a fine breed, reached over 11,900 head, increasing by 4.5 times over the number of 1979. [Beijing XINHUA Domestic Service in Chinese 0145 GMT 16 Nov 81 OW]

CSO: 4007/92

NEW WHEAT VARIETY BEING PROMOTED

Taiyuan SHANXI RIBAO in Chinese 25 Sep 81 p 2

[Article: "Actively Promote New Wheat Variety"]

[Text] The Shulu County Seed Company is actively promoting new wheat variety, "Shi 74531." This variety has been bred through 8 years of joint effort by the Shijiazhuang Institute of Agricultural Sciences and the Malan Farm in Shulu County. Variety comparison testing, acclimitization evaluation, and provincial and prefectural superior variety testing conducted by various units between 1979 and 1981 have demonstrated that this variety possesses properties of three savings (saving of water, fertilizer, and seeds), four resistances (resistance to disease, to lodging, to cold, and to dry, hot winds), ease of growing, ease of care, and consistently high yields. In large area testing at four sites last year, this variety exhibited yields greater than the locally promoted "Jinfeng No 1," its yields averaging 718.8 jin per mu, 197.6 jin more or 37 percent more than for the control variety. Last year, 12 production teams demonstrated its yields on 450 mu of fields in Milan where water and fertility are high, producing yields averaging 963 jin per mu, and from 141 of these mu, the third, fifth, and ninth production teams produced yields of more than 1000 jin per mu. This year, this company has expanded the area planted to 20,000 mu, and has used the Xinleitou Commune as its principal demonstration area to lay a good foundation for a bumper wheat harvest and the rapid spread of the new variety next year.

9432
CSO: 4007/67

BRIEFS

BUMPER HARVEST--Mianyang Prefecture has overcome a serious flood and reaped a bumper rice harvest. The prefecture's total output of paddy rice from 4.66 million mu of land was 0.6 percent more than last year, which was a record year. This prefecture was the most seriously flood-stricken area in Sichuan Province and some 4 million mu of paddy rice was damaged to various degrees. Of this, of paddy rice 200,000 mu was inundated and was flattened and some 110,000 mu of paddy rice was severely damaged by the flood. [HK101335 Chengdu Sichuan Provincial Service in Mandarin 2300 GMT 3 Nov 81 HK]

CSO: 4007/92

BRIEFS

JINHUA PREFECTURE COTTON HARVEST--Jinhua Prefecture, Zhejiang Province, has won a bumper harvest from its 175,000 mu of cotton. Per mu yield of ginned cotton averages more than 100 jin. Thus far the prefecture has delivered 122,000 dan of cotton to the state, overfulfilling the procurement plan by 1.3 percent. [Hangzhou Zhejiang Provincial Service in Mandarin 1040 GMT 18 Nov 81 OW]

CSO: 4007/92

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TITLE: "Follow Objective Principles to Arrange a Reasonable Crop System"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 5 Oct 81 pp 1-3

ABSTRACT: The crop system of an area is determined mainly by the heat energy and the atmospheric humidity of the locality. The socioeconomic condition and the level of agricultural science and technology should also be taken into consideration. Normally, in the cold temperate zone and temperate zone, it is one crop a year; in the warm temperate zone, 3 crops in 2 years; in north subtropical zone, 2 crops in a year; in the south subtropical and tropical zones and the equatorial zone, 3 crops a year, but in the same zone, such factors as topography, ecology and elevation will also cause variation of heat and humidity affecting the suitability of the crop system. At present, in Shanghai suburbs, the 3-crop system of grain-cotton and green manure-rice-rice in the eastern part has been successful but not as successful in the western part due to the poor soil condition and a deficiency of manpower. The required objective conditions for the 3-crop a year system are explained and in the opinion of the author a high and stable yield 2-crop system may be more reasonable and beneficial than the 3-crop system if the objective condition is not suitable.

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TITLE: "Soil Classification in Shanghai Region"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 5 Oct 81 pp 4-7

ABSTRACT: Soil survey and classification provide the necessary basis for agricultural regionalization. The group began to study the classification of Shanghai soils in 1979, using previous soil classification documents of 1959 and 1978 as references. For the convenience of future incorporation into the national system, the 5-level classification system: soil class, subclass, soil genus, soil species, and soil variety, is adopted. The 5 levels of classification and principles of nomenclature of soils of the various levels of classification are explained. This paper summarizes the background of the Shanghai Soil Classification Outline drafted and formulated by the authors and related pedological workers as a preparation for the second general soil survey of Shanghai which was launched in 1979.

AUTHOR: BIAN Yiji [0593 0110 3381]

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TITLE: "Molybdenum in Soils of Shanghai Suburbs and Its Effect"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 5 Oct 81 pp 11-12, 15

ABSTRACT: Molybdenum is a trace element necessary for the nutrition of plants and animals and its excess or deficiency in the soil will interfere with the normal development of plants and at the same time certain particular diseases will occur to men and animals. In 1979-80, a study was carried out on the content, distribution, and effectiveness of molybdenum in the soils of Shanghai suburbs. The average is found to be 0.13-0.16 ppm, lower or close to the critical value for molybdenum deficiency (0.15 ppm). Of all the soil specimens tested, the effective molybdenum content is lower than the critical level in 60 percent. In these soils, the application of molybdenum fertilizer has produced various degrees of yield increase results for peas, cabbages, rape, and other crops.

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TITLE: "Ammoniated Iron Sulfur Oxidation-reduction Bacteria in Paddy Soils and a Study on Their Enzymic Activity"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 5 Oct 81 pp 8-10

ABSTRACT: From the area of Dingshanhu-Baoshan of Shanghai, 30+ soil specimens are collected to proceed with soil microorganism and microorganism enzymic activity analysis. Results indicate that the content of nitrogen-containing organic matter of the soils is about 800-2500 jin/mu, higher in the soils closer to the city and the content of ammoniating bacteria is the same. The content of iron oxide bacteria varies in the same manner. The content of sulfate reduction bacteria is higher in the less fertile soils so is the activity of the reduction enzyme. In terms of soil profile, the number of bacteria and the activity are higher in the 0-10cm topsoil, compared with the 90-100cm bottom layer, but the activity of the sulfate reduction enzyme is higher in the bottom layer.

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TITLE: "Effects of the Number of Feedings on the Growth of Meat-porkers"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 5 Oct 81 pp 25-26, 28

ABSTRACT: The authors carried out 4 experiments on the effects of the number of feedings, while conducting a research on mixed feed for porkers. Piglets weighing about 20 kg of similar age are used and all are F_1 castrated hybrids. The control group are fed 3 times a day. The first experimental group are fed twice a day during the early period and once in the later period. There is one group fed randomly. The amount of feed consumed and the weight gain of the porkers of everyday and every month are recorded during the 103 days of each experiment. Results indicate that the porkers grow better if they are fed twice a day instead of once a day. Sharda et al (1977) also reported similar findings. It appears, however, that in some pig farms of Shanghai the porkers are fed many times a day, even throughout the night. According to the results of this study, feeding porkers more than twice a day appears to be unnecessary.

6248
CSO: 4009/112

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TITLE: "Error Correction of Numerical Prediction of Upper-air Situation Field"

SOURCE: Beijing QIXIANG [METEOROLOGICAL MONTHLY] in Chinese No 10, 10 Oct 81 pp 2-5

ABSTRACT: Although to a certain extent the various numerical prediction models simulate the various processes of atmospheric movement, they cannot precisely reflect the total phenomenon of the atmosphere; i.e. the prediction describes an atmospheric model and not the atmosphere itself. Even if such methods as error distribution, wave spectrum, etc. are adopted, the result of computation upon which the circulation prediction is based cannot help but to deviate from the actual situation. It has been more than 5 years since the Shanghai Municipal Research Institute of Meteorology began to apply the 3-layer simulation technique to make numerical prediction of high altitude circulation situation, the conclusions have remained qualitative and somewhat subjective in their actual application. This paper reports some attempts of the authors to analyze the errors made in the 500mb 24-hour prediction field. On the basis of the analysis, several error correction formulas are experimented for the purpose of finding a more objective technique of quantitative revision of the numerical prediction.

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TITLE: "Application of Cluster Analysis Method to Agroclimatic Classification"

SOURCE: Beijing QIXIANG [METEOROLOGICAL MONTHLY] in Chinese No 10, 10 Oct 81 pp 20-21

ABSTRACT: In the past, agroclimatic regionalization is largely made on the basis of analyzing the climate for selecting some obvious indices that are deemed to be significant to agricultural production. The classification system is, therefore, unavoidably subjective and random. Cluster analysis is a polyhedric and objective classification technique and its adoption can effectively produce a quantified agroclimatic classification. The authors used the cluster analysis technique to analyze the condition of agroclimate of Jilin Province and on the basis of the analysis, 26 representative stations and 5 agriculturally significant climatic indices for statistical computation are selected to divide the agroclimate of the province into 6 major types and 13 subtypes within each major type. The basic theory, method, and procedure of cluster analysis and the result of the sample analysis of Jilin Province are presented.

6168
CSO: 4009/116

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TITLE: "Survey of Condition of Pancreatic Fluke Infestation of Sheep in Some Banners (Counties) of Jilin and Nei Menggu"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 9, 20 Sep 81 pp 23-24

ABSTRACT: In the process of studying ways of treating sheep pancreatic fluke, the authors began in 1975 to carry out surveys of sheep farms of 8 communes of the 4 banners (counties) of Jilin and Nei Menggu. Sheep feces are mixed with water and allowed to precipitate for 10-15 minutes for examination under the microscope to count the fluke eggs. Abdominal incisions are made to tie the pancreatic-gall-bladder duct of the sheep before removing the pancreas and placing it in a dish for dissection, removing the parasites,identifying them, and counting them. Results of surveys with both methods indicate the rate of infestation to be 54.5 to 100 percent, averaging 77.3 percent of the 459 sheep thus examined. For prevention and control, hexachloro dimethyl benzene injections, avoiding grazing sheep in low and damp areas during Aug and Sep, exterminating the intermediate hosts (snails,) and breeding fluke-free herds of sheep are suggested.

AUTHOR: ZHOU Taichong [0719 3141 0394]

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TITLE: "Damage, Prevention, and Control of Bovine Infectious Rhinobronchitis"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 9, 20 Sep 81 pp 25-34

ABSTRACT: With the development of foreign trade and economic exchange, a la ge number of live animals and animal products are imported every year and some infectious diseases, nonexistent in China previously, will also be imported. One example is the introduction of bovine infectious rhinobronchitis when the Guangdong Overseas Chinese Commercial Company imported from New Zealand a herd of black and white dairy cows. Infectious bovine rhinobronchitis (IBR) is an acute respiratory contact infectious fever-producing disease of the cattle, It was discovered for the first time in 1950 in Western USA among beef cattle herds; later, it appeared among dairy cattle as well. The virus pathogen was isolated in 1956, being a type of bovine herpes virus. All its forms have been identified in the USA, Australia, New Zealand, Holland, England, and Japan. Some cattle are found to be long term carriers without apparent symptoms but their growth, development, milk productivity, and reproductive ability may be seriously affected. The characteristics of the pathogenatic virus, the infection pathways, the epidemiology, the technique of detection, the danger of the various symptoms, the possibility of infecting pigs, the technique of laboratory diagnosis, management and treatment of infected herds, and immunity and immunization of cattbe against this diseases are introduced.

6248
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CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

Conflict Increasing in Supply, Demand for Water Resources
(Yuan Zigong, Zu Yuting; RENMIN RIBAO, 21 Sep 81)..... 1

Status of Water Engineering Installations Management Reviewed
(Ke Lidan; SHUILI SHUIDIAN JISHU, 20 Sep 81)..... 4

Results of Study of North China Winter Wheat Areas Given
(Huang Peimin, et al.; NONGYE KEJI TONGXUN, 17 Aug 81)..... 12

Aid to Poor Peasants Reported To Achieve Good Results
(XINHUA Domestic Service, 21 Nov 81)..... 19

Anhui

Briefs
Early Rice Harvest 20

Fujian

Briefs
Hog-Raising 21

Gansu

Briefs
Tobacco Production 22
Production Resource Investigation 22

Guangdong

Strict Control of Rural Labor Moving to Cities Demanded
(NANFANG RIBAO, 15 Sep 81)..... 23

Province Promotes Development of Food Industry
(Jin Wei; NANFANG RIBAO, 25 Sep 81)..... 25

County Scientific Planting Promotes Bumper Rice Harvest
(GUANGZHOU RIBAO, 24 Aug 81)..... 27

Soybeans Planted Atop Embankments Around Rice Fields
(NANFANG RIBAO, 28 Sep 81)..... 29

Province Promotes Raising of Grass-Fed Animals
(NANFANG RIBAO, 4 Sep 81)..... 31

Briefs
Hainan Sugar Refining Season 32
Hainan Piglet Export 32
Tea Production 32
Late Hybrid Rice Planting 32
Hua County Peanuts 33

Guangxi

Briefs
Sugar Output 34

Heilongjiang

Briefs
Baoquing County Flood Damage 35

Henan

Briefs
Wheat Sowing 36
Soybean Harvest 36
Cotton Procurement 36

Hubei

Chen Pixian Attends Hubei Rural Situation Meeting
(Hubei Provincial Service, 25 Nov 81)..... 37

Briefs
Hybrid Rice 39
Rural Savings Increase 39
Agricultural Products Procurement 39

Hunan

Briefs
Pig Procurement 40

Jiangsu

Briefs
Bumper Harvest 41
County Agricultural Production 41
Xuzhou Prefecture Agricultural Procurement 41

Jiangxi

Briefs
Country Cotton Output 42
Duchang County Cotton Production 42

Liaoning

Liaoning Increases Tussah Silk Production
(XINHUA, 21 Nov 81)..... 43

Nei Monggol

Briefs
Bumper Harvest 44
Oil-Bearing Seeds 44
Plum Output 44

Ningxia

Agricultural Reclamation System Develops Diversification
(Ma Yuqi; RENMIN RIBAO, 12 Sep 81)..... 45

Briefs
Wheat Harvest 47

Qinghai

Briefs
Sheep Wool Procurement 48

Shaanxi

Building of Protective Forest Belt Achieves Good Results
(Wu Shitang, et al.; SHAANXI RIBAO, 31 Aug 81)..... 49

Policy Questions on Cotton Procurement, Harvest Clarified
(SHAANXI RIBAO, 1 Sep 81)..... 51

Briefs
County Crain Output 54
Autumn Harvest Reduction 54

Shandong

Wheat Yield Increased by Selection of Suitable Strains
(RENMIN RIBAO, 19 Sep 81)..... 55

Briefs
Cotton Procurement 57
Cotton Output 57
Grain Procurement 57

Sichuan

Lu Dadong Addresses Rally on Sichuan Floods
(Lu Dadong; SICHUAN RIBAO, 19 Oct 81)..... 58

'SICHUAN RIBAO' Urges Planting Trees Along Roads
(Fan Kun, Meng Jining; SICHUAN RIBAO, 6 Nov 81)..... 65

Xinjiang

Briefs
Animal Husbandry 69
Cotton Procurement 69

I. GENERAL INFORMATION

CONFLICT INCREASING IN SUPPLY, DEMAND FOR WATER RESOURCES

Beijing RENMIN RIBAO in Chinese 21 Sep 81 p 5

[Article by Yuan Zigong [5913 1311 1872] and Zu Yuting [4371 3768 0080]: "The Problem of Rational Utilization of Water Resources"]

[Text] The total amount of water resources in nature is about 14.5 billion x 100 million cubic meters. But the freshwater resources that we can use frequently are not plentiful.

The average annual total runoff of the rivers in our nation is about 2.7 trillion cubic meters, ranking fifth in the world. In addition, there are 700 billion cubic meters of underground water resources. Underground water and ground surface water are mutually convertible and there is an overlying amount. By population, our nation has an average runoff of 2,700 cubic meters, one-fourth the average value of the world. Therefore, we cannot generally say that our nation's water resources are very rich.

As industrial and agricultural production and urban construction develop, the conflict in the supply and demand for water resources in our nation is becoming more and more serious. Since liberation, the amount of water consumption in Beijing has drastically increased. Compared to 1949, the sale of tap water in 1978 increased 45 times. The amount of water exploited from wells provided for suburban regions near cities in 1976 reached 400 million cubic meters, over 100 times that in 1949, and another 100 to 200 million cubic meters have now been exploited, causing the underground water level to drop year after year. The drop in the southeastern suburbs is even more serious. At the beginning of liberation, the underground water level was only several meters from the ground sufrace. Now, water level drops an average of 1 to 1.5 meters a year. In Jinan city, the actual amount of underground water exploited has surpassed the allowable amount of exploitation by 60 percent. In Shijiazhuang city, the underground water level dropped 3 meters in 1980. Near National Cotton Plant No 1 in Changzhou, the stationary water level of underground water dropped from 18 meters in 1952 to 66 meters in 1980. This has caused the ground surface to sink in parts of some cities.

Solving the conflict between supply and demand for water resources requires opening up resources on the one hand and conserving the flow on the other. At present, the waste of water resources is very serious. In some regions where there is a water seriously because of leakage. The degree of effective utilization of water for irrigation is only 50 percent. The waste of water in city living is also astonishing. The main reason is poor management: There are no fees for the use of water,

and the state provides massive subisidies for water costs. For example, at present, Shijiazhuang city uses 7,700 cubic meters of water for living a year. With a population of 700,000 each person uses 110 cubic meters of water a year. Each day, each person uses 300 shen, surpassing the general standard stipulated by the state by onefold. Of the amount of water used for living in Shijiazhuang, 60 percent is under the big contract fee collection system. The water users of this amount of water average a daily per capital consumption of 426 shen of water, while family water users with water meters use only 80 shen a day per person. Wasteful use of water by city industries is also great, and the degree of repeated utilization is very low. Of the water used by industries in Beijing city, over 100 million cubic metes of good water are drained away, and the potential for further retrieval and utilization is great. In addition, our nation's present industrial production and city living drain over 70 million cubic meters of polluted water a day. Because most of it is not treated, the water resources at all localities are polluted in varying degrees, and this in turn has worsened the conflict between the supply and demand for water resources.

To rationally utilize our nation's water resources, we have several suggestions.

1. The state should establish a leading organ to uniformly manage water resources and establish national water laws and related regulations and systems. Each province and city can first establish methods to manage water resources in accordance with the actual situation of the locality, such as limiting the sinking of wells at will, uniform management of water sources of wells provided for private use and collection of fees, and implementation of planned use of water.

2. The nation, the province and the city should establish corresponding technical and economic policies, encourage conservation of water, and give attention to water conservation construction projects and technical measures in investment, facilities and equipment. A definite amount of capital for water conservation should be appropriated, or the money collected from fees levied on wells provided for private use can be utilized to create conditions for launching the work of conserving water.

3. The demands upon production value and the submitted profits of water companies cannot be the same as those of other enterprises. While satisfying the demands for the use of water to develop production and elevate the living standards of the people, it is reasonable and normal for the water companies to continually increase the amount of water sold with a corresponding increase in production value and profits submitted. But if the massive waste of water by the various departments is not considered, if the higher leading departments only care about demanding that the water companies increase production and profits submitted, there will be some false values. For example, if Shijiazhuang city abolishes the system of including water costs, over 30 million cubic meters of water for living and over 2 million yuan of water costs can be saved a year. This portion of the wasted capital is mainly public subsidies, and it is not right to include this in the production value and the profit of the water companies. This is because this portion of money is not a part of the production value of effective production but is an imaginary number; the more water resources are wasted, the larger this imaginary number, which is unfavorable to the city and to the state. Therefore, the work of the water companies must be closely combined with planned conservation of water.

4. Effective measures must be taken, including legal action and economic sanctions, to strictly prevent pollution of water resources. Those which have already been polluted should be treated as soon as possible. Plants that pollute waterheads should be quickly treated and converted.

5. There must be investigation and study of rational use of water according to plan, and guidelines for the repeated utilization of water for industrial use should be established in accordance with the actual situation of each profession and business and combined with the characteristics of each locality.

6. The long-term plans for industrial development of each region must be considered in close combination with the quantity, quality and distribution of water resources. In particular, especially careful consideration must be given to the scale of development and the selection of sites of industries that consume a massive amount of water and that cause pollution.

9296
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STATUS OF WATER ENGINEERING INSTALLATIONS MANAGEMENT REVIEWED

Beijing SHUILI SHUIDIAN JISHU [WATER CONSERVATION AND HYDROELECTRIC POWER TECHNOLOGY] in Chinese No 9, 20 Sep 81 pp 1-4

[Article by Ke Lidan [2688 4409 0030], Office of Installations Management, Ministry of Water Conservancy: "Problems of Strengthening Scientific Management in Relation to This Country's Water Engineering Installations"]

[Text] This May a national water conservancy management conference held in Beijing decided, in accordance with the Central Committee's general policy of further readjusting the national economy, to shift the focus of water conservancy work to management and to begin by strengthening installations management. This is an important strategic policy decision stemming from the development of this country's water conservancy work to its present stage. It means that water conservancy work should shift from its former focus on new construction to a focus on management; start according top priority to good management and use of existing installations; and place its primary reliance on realizing the benefits of existing installations, improving results, and developing in a steady and healthy fashion. The author discusses problems of intensifying scientific management on the basis of his own experience and the current status of this country's hydraulic installations management.

1. A Summary of Water Engineering in This Country

Since New China was formed, under the leadership of the party and government the cause of water conservancy has made rapid progress. More than 86,000 reservoirs have been built nationwide, with a total capacity of more than 400 billion cubic meters; there are 5,200 irrigated areas of 10,000 mu or more, and the total irrigated area is 670 million mu. There are 168,000 kilometers of dikes (including sea walls and lakeside embankments) protecting more than 480 million mu. There are 25,000 dams. In addition, there is a large number of electrically powered irrigation and drainage pumping stations, small-size hydroelectric stations, and mechanically pumped wells. The current number of management personnel nationwide accounts for a third of all employees in the water conservancy system, in addition to a large number of commune and brigade management personnel.

Water engineering construction and facilities management and utilization have made it possible to begin controlling ordinary floods and droughts and have essentially guaranteed the development of agricultural and industrial production

and the safety of the cities and the countryside. Grain production on irrigated areas accounts for two-thirds of the country's total grain output. Hydraulic installations have provided water sources amounting to about 40 billion cubic meters for cities, industry, and the people's livelihood and have solved the drinking water problem for more than 40 million persons in framing and grazing areas. About 60 percent of the 30 million mu of water area in areas protected by water engineering works and of the more than 3 million mu of mountain slope land suitable for "greening" have begun to be developed and utilized.

2. Some Important Topics in Management of Installations

The basic task in water engineering installations management in ensuring safety, getting the full benefit from the installations, actively pursing diversified operation, and continually improving the quality of scientific management, serving industrial and agricultural production and the livelihood of the urban and rural populace, and promoting the development of the socialist economy.

As this country's national economy develops and the urban and rural populations increase, water needs continually present new requirements and water resource-related land utilization problems, so that the nature and tasks of present-day installations management are becoming increasingly complex. The work of installations management is no longer simply management of the water engineering facilities themselves, but also involves many social, economic, and other questions. Often these questions cannot be solved by purely engineering and technical measures or management and administrative measures, but require overall planning and study of all relevant factors, leading to development of various comprehensive measures and approaches which include social, economic, and technical aspects.

A. Distribution and Management of Water Resources in Installations Already in Operation

Allocated use of hydraulic engineering installations generally is carried out in accordance with design specification. The development of industrial and agricultural production, the increase in the number of water users, the rising quantities of water consumed, and particularly the increasing share of water used for urban life and industrial purposes have posed new assignments regarding distribution and management of the water resources in existing hydraulic engineering projects, especially in areas of the north where water resources are scarce. Some water resource projects which originally were intended to serve agriculture are being or have been converted to urban water supply.

To obtain the optimal economic effect from limited water resources, it is necessary on the one hand to stress thrifty water use, decrease consumption, and control pollution, while on the other hand it is necessary to balance water needs against each other in the distribution process; the government must formulate effective and rational water policies for every water resource management area. The units which manage the water projects must not simply allocate water use according to the design specifications but must make thorough investigations and water use forecasts, conscientiously implement policy, and further improve water allocation and management work.

B. Maintaining and Expanding the Reproduction of Water Engineering Installations

Most people think that water is an inexhaustible public good, that water use should cost very little, and that no organization or individual user is likely to have much effect on the water resource situation. In reality, water is renewable, but the supply is limited. All water which has been subjected to regulation, impoundment, transport, and supply in a water engineering project is a product which contains embodied labor. Water is necessary for the people's livelihood and for industrial and agricultural production and, accordingly, has a utility value. As in the case of other energy resources, national water price standards should be set in terms of cost and value. Water prices should express water costs. Water costs generally should include the depreciation of facilities, maintenance expenditures, administrative and management expendistures, and interest on the investment, for only in this way is it possible to maintain and expand the reproduction of water engineering projects: this is the foundation of economic management of these facilities.

C. Unified Management of Water Engineering Facilities in Terms of Entire River Systems

Currently, most of the water engineering installations in our country are managed at various levels in accordance with administrative divisions. A few facilities are already subject to "river system management," such as the lower Yellow River rivercourse, embankments, and and installations. With increasing diversion of water outside the boundaries of individual river systems, in some cases management by water engineering district has begun. Because the river basin is the basic hydrographic unit, water-related activities should consider basin area as a system. Management of facilities in terms of entire water systems makes it possible to break out of the limitations imposed by administrative districts, decrease manmade hindrances, carry out more effective coordinated distribution among the various installations in a given river system, and ensure safe and economical operation of the installations. Unified management of all installations in a river system also is a reliable guarantee that comprehensive, unified planning can be carried out and that the benefits of existing water engineering installations can be consolidated and brought into play. At the same time, it enables the managers' main effort to be directed toward scientific and effective management. Gradual implementation of unified management of entire river systems should be the developmental tendency of facilities management in the future.

D. Establishing Laws and Regulations on Management

In the past, under the influence of an approach to water engineering facilities which stressed new construction and underemphasized management, existing installations were poorly managed and their economic effects were not fully brought into play; one of the most salient problems is the long-standing neglect of water conservancy legislation and the lack of an effective and complete set of management laws and regulations. For example, because of the lack of clear laws and regulations, various hindrances in certain watercourses are troubled by decreasing flood diversion capabilities. Because of unsystematic building of dikes for land reclamation, the water storage capabilities of some lakes has decreased.

Some installations have been subject to manmade damage, and the pollution of many water sources is daily becoming more serious. The lack of clear legal provisions and systems also is expressed in frequent changes in the management organization, lack of clear definition or rights and limitations, poor functioning of the relevant organizations, and the fact that no normal management procedures have yet been drawn up for many installations.

Management laws and regulations, including social norms and technical norms, are the standards for activities dealing with the facilities in water engineering projects and the areas which they protect. Laws and regulations are summarizations of general and specific policy and experience which specify what should and should not be done, what is not permitted, and how things should be done. They may be improved by gradual increases in detail and thoroughness and by the accumulation of practical experience. Currently, there is an urgent need to develop a set of management regulations, guiding principles, practices, and procedures so that all management work will be legally based and in accordance with rules.

E. Safety Management for Large Dams

Not only should we carry out the necessary evaluation of the way in which the flood protection and benefits-producing capabilities of reservoir installations are brought into play, we also should consider the great harm done to the state and the people's lives and property by failures of large dams and realize that some reservoirs which are in dangerously poor condition represent a latent danger in installations management work. Although more than 97 percent of past dam failures occurred with small dams having reservoir capacities of 10 million cubic meters or less, there are large concentrations of rural population downstream from many small reservoirs, and the harm done by a failure would be grave, in addition to which many of these small reservoirs are not subject to management. The harm done by failures of large or medium-size dams is much more catastrophic.

Currently, because of inadequate investment, planning to increase reservoir safety is proceeding slowly and, in addition, no complete effective system and methods for overall intensification of dam safety management have yet been established. No effective control is being exercised to prevent dam failures. During the period of readjustment of the national economy, we must no slacken our work of increasing dam safety; and, in particular, we must make a special effort to deal with certain critical dams whose failure could produce catastrophic damage. At the same time, we should realize that there is a natural frequency of occurrence of floods; and flood protection work done under a given set of flood protection standards can only result in a certain degree of protection, so that future dam collapses are probably not completely avoidable. As a result, we should assimilate relevant experience in this country and abroad; and we should strengthen dam safety management so as to thoroughly bring into play the reservoirs' economic effects and maximize our control over dam failures, decreasing instances of dam failure to a minimum.

F. Safety Measures and Policy Implementation for Floodwater Storage and Diversion

Currently, in this country's more than 60 locations for floodwater storage and diversion, with an area of more than 10-square kilometers, the total quantity

of floodwater stored may be as high as 90 billion cubic meters, making them an important part of river flood protection management. Problems involved in management of these floodwater storage and detention areas and the utilization of the relevant lands involve the livelihood and productive work of hundreds of millions of people and affect social order and unity. In order to carry out effective floodwater diversion and storage and to ensure the safety and productive capabilities of people in the areas affected, we should systematically set up safety levees and evacuation routes and take other safety measures in accordance with local conditions; in addition, we should formulate reasonable acquisition and purchase policies, investigate the institution of flood protection insurance funds and the like. As regards agricultural production in these areas, we should make rational use of land, plant suitable crops, develop economic diversity, and the like.

G. Other

Certain other topics related to installations management also await resolution, such as ways of using design and construction work to create the necessary conditions for management work and improving the living and production conditions of management organizations, conducting administration and management work on economic principles, improvement on hit-or-miss management of installations, and effectively developing the management contingent.

3. Learn During Practice and Steadily Improve the Level of Scientific Management

With regard to problems of management, we should not only understand the importance of management work but should strive to learn about management and steadily increase the scientific character of our management work. Scientific management does not mean the same thing as past traditional management based on the experience of the enterprise proprietor; it also is to be distinguished from modern management, which utilizes progressive techniques. Scientific management requires the conduct of scientific, effective management on the basis of objective laws and economic laws. Its goal is to improve labor productivity and management effectiveness and to maximize the economic effectiveness of the installation.

Management work has a dual nature. On one hand, it has a natural character associated with the productive forces, production technology, and socialized production while, on the other hand, it has a social nature connected with production relations and the production system. Accordingly, the specific nature of scientific management gradually develops as production technology progresses and the degree of labor socialization is increased.

As regards the current status and development trends of water engineering installations management in our country, the specific nature of scientific installations management can be expressed in the following four categories.

A. Legal Management

Legal management includes management laws and regulations, water policy, and the like. In the last few years, relevant bodies have been devoting serious attention to development and implementation of water conservancy laws and regulations. The State Council issued a circular on protection of water engineering installations in 1979, and the "Regulations on Water Engineering Installation Management (Trial Implementation)" is about to be promulgated. Some provinces and counties also have issued management regulations, notices, and procedures in the name of the government, which have contributed to the progress of management work. In the future, additional management laws and regulations must be drafted and gradually perfected. Currently, it is necessary to actively join together with the governmental and legal departments to intensify propaganda and education on the legal system, make a special effort to deal with representative cases, and eliminate anarchism and the failure to prosecute illegal activity. Just as in the case of safety incidents, the reporting procedure for cases of failure or damage to facilities should be established. People's economic police and public security stations should be established for key facilities and important installations. Laws should be thoroughly implemented, all activities which hinder effective operation of the facilities should be prohibited, the design capabilities of the installations should be maintained, and policies regarding water storage areas and floodwater storage and diversionary areas should be developed.

B. Organizational Management

Organizational management includes the management system; water system management; and organization and staffing of the management machinery, democratic management, and the like. Further studies must be made regarding the establishment of a scientific management system. In cases where the current management system is rather chaotic or excessive power has been delegated downward, a readjustment should be carried out. In the case of major rivers which have still not been put under river system management, unified management on the basis of the river system should gradually be instituted. Whether river system management is in use or management according to administrative divisions is still being practiced, the principle of division of responsibility among the different levels must be followed; and each level's management responsibilities with regard to the facilities (or water system) under its jurisdiction must be clearly defined. The management departments at all levels must make an energetic effort in management of the installations under their control and guide a real management work.

The "Experimental Implementation of Standards for Organization and Staffing of Water Conservancy Installation Management Units" which went into trial implementation in June of this year was developed by learning from industrial enterprise management experience and with reference to the practice of water engineering facilities management in this country. It is a basic work in scientific management and a guide for improving labor organization and providing rational staffing. It is of great importance for reversing management units' long-standing practice of not providing fixed staffing, having no work quotas and no job responsibilities, and for establishing the position responsibility system, improving labor productivity and setting up normal management procedures, and should be implemented.

C. Technical Management

Technical management includes inspection and monitoring of installations, use allocation, maintenance, technical regulations, technical training, management research, and the like.

In recent years, the Ministry of Water Conservancy, together with relevant province, municipal, and autonomous region water conservancy departments and certain basic-level management units, has drawn up or revised a set of technical regulations including various "general rules," "standards," "procedures," and "norms." These are a summation of this country's experience in the technical management of water engineering installations and a guide for technical management work. Conscientious implementation of these regulations and reliance on them in gradually setting up the various systems of regulations for the basic-level management organizations are an important aspect of practicing scientific management.

D. Economic Management

Economic management includes water prices, economic accounting, econmic diversity, administration, the economic responsibility system, and the like.

The present national water engineering management conference has selected 54 advanced management organizations whose experiences, while they differ in many respects, also have a point in common, namely that they have practiced intensified economic management. For example, Tingxi Reservoir in Fujian Province persistently treated water as the main concern and electricity as a secondary concern, also laying stress on fish raising, orchards, and livestock raising; with the objective of serving large-scale socialist agriculture, it emphasized economic results, both expanding social benefits and increasing profits. The reservoir management's calculation of water costs, its use of costs to develop rational reservoir water price standards, and its economic evaluation of operating results providing fresh experience for economic management of water engineering facilities. In addition, the Jingshu irrigation region, the Jiamakou irrigation and drainage pumping station, the Hanjiang Dredging and Flood Control Office, the Guazhou Dam Management Office, the Tongcheng County Small-Scale Hydroelectric Station in Hubei, and other advanced units all had excellent results in production management, econmic diversification, and administration and are models of economic management of their various types of facilities.

Some of the water engineering installation management units are services and some are enterprises. The units of an enterprise character are profit-making economic organizations with independent economic accounting and must exercise enterprise management just as industrial enterprises. Currently, most service-type water engineering installation management units also must carry out economic accounting and gradually institute enterprise-type management. The "Experimental Procedures for the Financial Performance Contracts in Water Engineering Installations Management Units" and the "Financial Management Procedures and Accounting System (Trial Implementation)" promulgated by the Ministry of Water Conservancy and the Ministry of Finance is an important guide to strengthening economic management of service-type units. During the trial implementation period, experience must constantly be summarized so as to gradually improve these documents.

To summarize, in the course of practice, we must realize more clearly the importance and the necessity of scientific management, we must study and penetrate into the theories and methods of scientific management, we must learn from the management experience of advanced units, we must learn from industrial enterprise management experience, and we must adapt this knowledge to the practice of water engineering installation management. We must extract greater economic benefits from existing water conservancy installations and make greater contributions to the country's socialist modernization.

8480
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RESULTS OF STUDY OF NORTH CHINA WINTER WHEAT AREAS GIVEN

Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 8, 17 Aug 81 pp 1, 2

[Article compiled by Huang Peimin [7806 0160 3046], Li Xida [2621 1585 6671], Shi Suoda [0670 6956 6671], Chen Jian [7115 1017]: "Inspection of Breeding and Cultivation in the Northern Winter Wheat Region"]

[Text] To investigate breeding and cultivation in the northern winter wheat regions and to discuss and organize cooperative research in key scientific research subjects, the Chinese Agricultural Sciences Academy organized a total of 32 specialists and professors of the agricultural sciences academies of six provinces (cities) and related regional agricultural science institutes and higher educational institutions to go in three groups to Henan, Shandong, Hebei, Shaanxi, Shanxi, Beijing, Gansu (Zingyang), and Jiangsu (Xuzhou) to conduct an inspection tour lasting over 20 days. After the tour, they returned to Beijing and briefly summarized their findings. Their findings, based on the brief summary, are presented as follows:

Varieties and Breeding

After the actual inspection and discussion, the following points were the more outstanding ones:

The original main varieties are still continuing to develop their function. Since the founding of the nation, this wheat region has changed varieties three or four times. After each change, the yield has increased. Among the varieties selectively bred and introduced during the 1960's and at the beginning of the 1970's, the following are still planted and still serve as the main varieties: Taishan No 1, Taishan No 4, ah fu and 7023, feng chan No 3, ah bo, and zheng ying No 1. In Shandong and Henan provinces, "Taishan still dominates." Many of these varieties have already shown that they can no longer adapt to production development needs; but, because there have not been any ideal varieties to replace them, they still "dominate."

New reserve varieties have already begun to propagate, and the area in which they are planted is expanding. In recent years, the dominant form of stripe rust pathogenic bacteria has changed, and Taishan No 1 and such main varieties have been shown to be seriously infected. In some regions, such diseases as

cereal scab, powdery mildew, and viral diseases also are becoming more and more serious. In addition, the main varieties described above generally need more fertilizer and water, but after there are increases in the amount of nitrogen applied and irrigation, the maturation period is delayed 5 to 10 days. Frequently during the later growth period, the plants remain green and dry, forced heating occurs, and the thousand grain weight drops sharply. At the same time, because the farmwork of "seizing harvests and seizing sowing" in intense, the sowing period of summer-sown crops is frequently delayed. This not only leads to late maturation and reduced yields of autumn-harvested crops, but it also increases late crop wheat. At present, Shandong Province has already reduced the planting area of Taishan No 1 and Taishan No 4, while the areas planted in Taishan No 5, Changle No 5, and Yannong 78 have been expanded. For many years, because there were more ah bo and zheng ying No 1 in Guanzhongdao, the maturation period of wheat was delayed from the first 10 days in June to after 10 June, affecting the whole year's yield. Therefore, early maturing varieties such as shaan zao No 1 are very popular, and at present their propagation and popularization are being hastened. The area of zhanzhou 761 in Henan has already been expanded to 2 million mu. Houqiao Brigade in Boai County planted 7023 for many years; because the variation in the thousand grain weight was large, the yield lingered for a long period. At present, bai quan 3039, which has heavy panicles and more grains, is being propagated to increase the unit yield. Linfen No 10 of Shanxi Province has developed quickly. The two lines of 4024 and 23654, newly bred successfully in Hebei Province, are starting to be planted on expanded areas. Beijing City is propagating you mang hong No 7 x luo fu lin 10, you mang bai No 4 x luo fu lin 10, jian 26, and jian 31 and such varieties (lines) in preparation for a gradual reduction in the area planted in nong da 139. But there are few seeds of these reserve varieties; and, within a short period, it is difficult to determine the "dominant" variety.

Regional experiments with varieties have determined a group of superior varieties. Each province is carrying out regional or joint experiments with varieties according to certain ecological zones. Shandong Province has determined the practical value of such varieties as Jinan 14, Yannong 76, and ai meng niu. The varieties of Taiyuan 633, Taiyuan 95, and Linfen 6653 of Shanxi Province have performed well and are being demonstrated.

The goal of breeding is beginning to change. In the past, rust resistance (mainly stripe rust disease), high yield, short stem, and resistance to lodging were considered the main goals of breeding; and visible results were obtained. But the work centered around high-yield fields with good conditions of fertilization and irrigation. These fields constitute 10 to 20 percent of the [total] wheatfield area. Efforts were concentrated in the pursuit of high-yield varieties that could produce 1,000 jin per mu and even 1,200 to 1,500 jin per mu, but very few people studied the varieties for large areas of medium- and low-yield wheatfields. In Uan'an, Qingyang, and Hengshui prefectures, the unit yield of wheat lingered between 100 and 200 jin because of problems of aridity, infertility, sand, and alkalinity, and efforts were exerted to emphasize breeding in fertile and irrigated land. In actuality, however, the area of medium- and low-yield wheatfields constituted over 80 percent of the total wheatfield area in this wheat region. At present, many units have begun to readjust the goal of breeding according to the natural and productive conditions of the locality. Shanxi Province has proposed concentrating on treating arid land, grasping

irrigated land well, increasing the yield per unit, and increasing the total yield. The Wheat Research Institute of the Shanxi Provincial Agricultural Sciences Academy (Linfen) established a dryland wheat-breeding laboratory. Most regions in Henan and Shandong have turned to land with medium fertility. Each locality has some dryland wheat varieties that have performed well. For example, han xuan No 10 (Shanxi), Zhenfu No 6, Jiyuan 728 (Henan), Shaanhe No 6 (Shaanxi), Hengshui 781 (Hengshui), and such varieties have a stronger tolerance to aridity. The area planted in Beijing No 10 in the drylands of central and southern Shanxi totals nearly 2 million mu. The area of Jinan No 2 and Changle No 5 in Qingyang has reached 400,000 mu. There also are many farmhouse varieties--such as hong tu tou, ma za mai, and bai da tou--which have relatively stable yields on dry plateaus and slopeland, and they also are basic materials for cultivating varieties that are tolerant to infertility and are resistant to drought.

The selective combination of parents of distant kinship must be emphasized. For over 30 years, each locality has bred over 1,000 varieties and has used them in production. But most varieties are closely related. The source of resistance (stripe rust disease) used is mostly the Italian varieties, such as nan da 2419, ah fu, and ah bo. There are some that come from the Americas, such as zao yang mai, shen li mai, and ou ru, as well as varieties from other European nations, such as su zao No 1 and dan mai No 1. They number only a little over 10 varieties altogether. There are only a dozen local varieties, including you zi mai, jiang dong men, and Chengdu guang tou which have been used as the dominant parent. At present, the "infant" varieties (lines) that have performed relatively well at each locality are mostly related to the wheat varieties of Eastern Europe, such as lou fu lin types, ah fu le er, Caucasus, and shan qian mai. Thus, if the physiological form of the dominant stripe rust pathogenic bacteria changes, a whole group of varieties may lose the ability to resist stripe rust disease. Again, for example, Henan has been using a concentration of Italian varieties (zhen ying No 1 and 7023) and their derivatives. Besides having a poor quality of seed grains, these varieties in the main are not resistant to powdery mildew and virus diesases. Therefore, we must fully emphasize and strengthen in a practical way the study of comprehensive evaluation and utilization of the quality of wheat varieties. We also must develop hybridization between species and genus of wheat varieties and hybridization between closely related plants in order to obtain more and better resistance sources or genetic types.

The exchange of resources of the quality of varieties and materials for breeding must be strengthened. During the course of inspection, each unit proposed that scientific and technical information as well as academic viewpoints be exchanged frequently and that coordination be organized between the professions and the units in scientific research in breeding. These efforts are intended mainly: first, to establish a comprehensive evaluation and exchange of quality of wheat varieties; second, to utilize fully the many and varied natural conditions for exchanging early generation hybrid materials for cultivation elsewhere and carrying out "shuttle breeding"; third, to utilize the large-grain kernel of sterile wheat as the breeding tool to make large amounts of combinations in order to carry out phototropic cultivation or selection by rotation; fourth, to divide work rationally so as to do well the fundamental work of breeding and theoretical research, such as organizing a national experiment on the developmental ecology

of wheat, and carrying out research into hereditary patterns. We must quickly change the present situation of scattered efforts; repetition of work; and wasted manpower, money, and materials and exert efforts to increase the efficiency of breeding.

Establish rules and a system for sound regional experiments on varieties. Regional experiments on varieties is a procedure of breeding. Through regional experiments, we can objectively and accurately determine varieties and provide scientific data on the practical value, suitable regions, and characteristics of cultivation of superior varieties for the production units as the basis for evaluating and determining the varieties. The agricultural science and research departments should join the seed department and the breeding and production departments to summarize experiences and lessons and to establish rules and systems as soon as possible. Relevant departments must give their support to make sure that regional experiments are conducted smoothly.

Planting and Cultivation

The problems discovered in inspection and concrete opinions are as follows:

There is an imbalance between wheat-producing regions, and there are big changes between years. In recent years, wheat production in the northern winter wheat regions has developed rather quickly, but unit yields vary greatly: high yields have reached 1,000 jin; low yields are under 100 jin; and regional development is not balanced. The variation in yields from year to year also is large. Take the famous high-yielding region of Xinxiang as an example: the wheat yield is not stable. According to preliminary information, the more than 5 million mu of wheat in the whole region produced unit yields of 510 jin, 380 jin, 448 jin, 523 jin, and 450 jin in the years from 1976 to 1980. The difference between the high-yield year and the low-yield year is 60 - 130 jin. Similar situations have occurred in other regions, and some variations have been even larger. The main reasons are, first, planting did not suit the local circumstances, crop openings were broken, and the degree of damage to dryland and infertile land was more severe. Second, water conservancy facilities were not up to standard, and utilization of water sources was not rational. Third, emphasis was placed on high-yield varieties, a lot of fertilizer and water was consumed, maturation periods were delayed, there were more disasters during the later growth period, and the thousand grain weight was unstable. Fourth, some regions still used a lot of fertilizer, irrigated a lot, and sowed large amounts of seeds; the costs were high and the yields were low. Fifth, the broad dryland and infertile regions seriously lacked phosphorus, the supply of phosphorous fertilizers was insufficient, and nitrogen and phosphorus were not in balance, thus limiting the improvement in the yield.

The distribution in planting wheat should be rationally readjusted. The growth of wheat requires definite conditions of fertility and irrigation. Without such conditions, increased yields are not possible, and there may not be any harvest. Therefore, in saline and alkaline regions, in arid and infertile regions, and in regions of slope land and ridges, we should develop corresponding crops that are tolerant to salinity and alkalinity according to the conditions, or change to

the planting of grass and trees or to the development of woody, oil-bearing crops. We cannot disregard conditions and blindly expand the planting of wheat. In dry loess highland regions, we must advocate rotation cropping of wheat and rape, green manure or peas, and alfalfa in a big way, and revive the rational planting system. We also must limit the area of multiple planting, basically using one crop a year or three crops every 2 years as the main system, and emphasize summer tilling and summer fallow land to revive the fertility of the land and to store rainwater. An inspection of Shuangjiu Brigade in Bucheng County, Shaanxi Province, showed that, under the same conditions, the per mu yield of the late wheat crop was less than 100 jin, the per mu yield of wheat planted in fallow land was 300 jin, and the per mu yield of wheat planted in peafields could reach 400 jin. In regions where rainfall is not sufficient but irrigation conditions are good, and in regions of triple cropping over 2 years, interplanting and companion planting of foodgrains and green manure crops can be advocated. Experiments at each locality proved: Mung beans sown after the wheat is harvested generally grow for more than 30 days and produce over 1,200 jin of green manure. Calculating a 0.5-percent content of nitrogen in the chlorenchyma, each mu has at least 6 jin of nitrogen, equivalent to 30 jin of ammonium sulphate. This is an effective way to open up sources of fertilizer and to nurture soil fertility.

Sowing at suitable times and reducing late wheat crops should be advocated. Overly early sowing easily causes overly prosperous growth; the colony becomes too large and is unfavorable to field management the following year. Overly late sowing easily causes the seedlings to become three types of seedlings, and yields will not be high. At present, weak seedlings of the late crop at each locality are the important factor affecting the wheat yield. According to statistics from Hunan Province, in ordinary years, the late crop wheat has reached over 20 million mu, constituting about one-third of the sowing area of wheat throughout the province. We must pay attention to selectively breeding early maturing wheat varieties, control fertilization and irrigation, and selectively use early maturing summer-sown varieties of crops or take measures to stimulate late-maturing varieties to mature early so as to ensure that the autumn-harvested crops can provide a crop opening early and thus reduce the areas of wheatfields with late-sown, weak seedlings.

High-yield fields should continue to produce increased yields, and the cost to farm them must be lowered. At present, the unit yield of high-yield fields at each locality lingers around 800 jin. A small number of panicles and grains and a light and unstable thousand grain weight are the main factors limiting the continued increase of yields. In the northern part of this wheat region, there are only some 20 grains per panicle, while in the southern part the number of grains, though slightly higher, is only about 30. Each locality has taken some measures to increase the number of grains per panicle and the weight of the grains, such as selecting and using varieties that produce more fruiting grains and a high thousand grain weight, and strengthening management of fertilization and irrigation during the starting period, jointing period, and filling period. These [measures] have all been effective. But it is worth emphasizing that some high-yielding teams apply an ever-increasing amount of fertilizer each year; and, while the farming cost continues to increase, the yields do not increase. The 3,000 mu of wheat of the Mengpai Brigade in Changge County, Henan Province,

produces a unit yield of about 700 jin in ordinary years. Since 1978, that brigade has continued to increase the amount of fertilizer applied but, whereas the farming cost has increased, the yield has dropped. In 1978, 129 jin of ammonium bicarbonate were applied per mu, the unit yield was 705 jin, and the cost for each jin of wheat was 0.0295 yuan. In 1979, 145 jin of ammonium bicarbonate were applied per mu, the unit yield was 668 jin, and the cost was 0.0353 yuan. In 1980, 165 jin of ammonium bicarbonate were applied per mu, the unit yield was 573 jin, and the cost was 0.052 yuan. When too much nitrogenous chemical fertilizer is applied to high-yield fields, this not only increases farming costs but also cuases late maturation and withering, while green, powdery mildew becomes more serious and lodging also becomes more serious. Of the 7 million mu of wheat in Xuchang Prefecture, 1 million to 1.5 million mu are affected by powdery mildew in ordinary years, and sometimes the affected area is over 2 million mu.

The deficiency of phosphorus in low-yield wheatfields on dryland, infertile land, and saline and alkaline land has become an outstanding problem. After the supply of nitrogenous fertilizer is improved, there is an imbalance in the ratio of nitrogen and phosphorus. This is the key factor now affecting the yield of low-yield fields. According to surveys conducted by the Henan Provincial Agricultural Sciences Academy, the province has about 48 million my of medium- and low-yield wheatfields. The content of organic matter in the soil is less than 0.6 percent, the total nitrogen content is 0.05 percent, and immediately effective phosphorus is 5 ppm. The amount of immediately effective phosphorus in large wheatfields in Xuzhou Prefecture, Jiangsu Province, is only 3 to 5 ppm. Appropriately increasing the amount of application of phosphorous fertilizer in these regions produces visible increases in yield. In the experimental wheatfields in the northwest arid loess highlands, each jin of phosphorous fertilizer can result in an increase of 3 to 4 jin of wheat. In addition, the need for phosphorus by oil-bearing crops, green manure, and leguminous crops also is urgent. At present, we must take measures to supply phosphorous fertilizer on a priority basis in regions where the soil seriously lacks phosphorus.

Cooperative research in cultivation should be strengthened. Each locality must summarize the effective techniques and experience (including scientific research achievements) that produce increased yields, so as to gradually form a standardized system of cultivation techniques of different types for different regions. We also must start out from the viewpoint of "cosmic cultivation" and related specialized cooperation in order to promote the ecological balance of the entire region and to study zoning and the planing system centered around wheat. Some regional studies show that mechanized operation of furrow sowing, concentrated application of fertilizer, and packing once--especially in arid loess highlands, saline and alkaline land, and extremely cold regions--can produce the comprehensive result of resisting drought, preventing cold damage, avoiding salinity and alkalinity, and cultivating healthy seedlings. At present, it is necessary to organize the relevant units in the cold northwest arid loess highland regions and the lowland saline and alkaline regions of the Huang, Huai, and Hai rivers to study together in order to come up wiht suitable methods and machinery for sowing and for applying fertilizer. In addition, we must develop the ecological study of the growth of wheat. We must select typical localities at different latitudes, at different elevations above sea level, and with different productive

conditions; utilize sowing in different stages; and study the ecological adaptability of different types of varieties. This is important, fundamental work. Not only can it provide a basis for rational distribution of wheat production, but it also can develop the theoretical fundation for the study of ecological breeding and cultivation. It is necessary to organize concerned units throughout the nation to develop cooperative research.

9296
CSO: 4007/28

AID TO POOR PEASANTS REPORTED TO ACHIEVE GOOD RESULTS

OW221151 Beijing XINHUA Domestic Service in Chinese 1202 GMT 21 Nov 81

[Excerpts] Beijing, 21 Nov (XINHUA)--XINHUA editor's notes: aiding impoverished households in rural areas and helping them overcome difficulties in production and livelihood has been a consistent policy of the party and the people's government. To continue the work of aiding impoverished households in the new current situation of further implementing and improving the production responsibility system is a problem that should not be neglected. It is hoped that the party committees and people's governments at all levels will further attach importance to this task, strengthen leadership over this work, organize all the departments concerned to make a concerted effort, promote the task in a down-to-earth manner and help the impoverished households to gradually become well off. (End of editor's notes)

Many localities throughout the country have achieved remarkable results in aiding impoverished households. According to recent statistics of the ministry of civil affairs, over 21,100 people's communes in over 1,380 counties throughout the country have already launched aid to impoverished households. The figures account for 39 percent and 65 percent respectively of the total number of people's communes and counties in the whole country, the livelihood of many former impoverished households has been improved.

Since the convocation of the 3d plenary session of the 11th CCP Central Committee, the party's economic policies in the rural areas have been conscientiously implemented in various localities. As a result, the rural area has become prosperous and the income for commune members has increased. However, some 10 percent of peasant households in the country still have difficulty in their livelihood and need aid. After the downfall of the "gang of four," the task of aiding the impoverished households was launched in Sichuan, Hubei, Guangdong and Heilongjiang, and since the convocation of the 3d plenary session of the Party Central Committee, many other provinces, municipalities and autonomous regions have also started aiding impoverished households on a trial basis.

According to a survey, since the work of aiding impoverished households started in various localities, over 160,700 impoverished households in Sichuan Province have reached the living standard of local commune members in general and 25 percent of impoverished households in Heilongjiang have become well off.

CSO: 4007/105

BRIEFS

EARLY RICE HARVEST--Hebei, 13 August--Over 10 million mu of early rice in Anhui Province realized a bumper harvest; the total yield reached 7.29 billion jin, an increase of 5.6 percent over last year; the average per mu yield increased 93 jin over last year, creating the highest level in history. There were three main causes of the bumper harvest of early rice in Anhui Province this year: One was that the area of early rice was readjusted by suiting measures to local circumstances. During the key period of transplanting early rice, drought occurred in most regions in the province. The paddy rice producing regions which popularly implemented the joint production responsibility system of contracting production to the families and contracting work to the families, commune members had autonomy for "planting the crops by observing the heavens and the earth"; each family calculated in detail the "three water bills" for cultivating seedlings, transplanting and growth of early rice; stored water in reservoirs and ponds rationally and in a concentrated effort to assure that the fields suitable for planting early rice were transplanted in time; and at the same time, they insisted on planting dryland food grain crops in some highland fields, fields far away from water, and sandy fields. Second, the broad number of farmers adhered more and more to scientific planting. Third, the commune member families had a better foundation and applied more fertilizers. [Text] [Beijing RENMIN RIBAO in Chinese 14 Aug 81 p 1] 9296

CSO: 4007/18

BRIEFS

HOG-RAISING--The Fujian Provincial People's Government makes efforts to encourage hog-raising as a household occupation. At present, some 3,600 households in the province are engaged in hog-raising production. They have raised 66,000 hogs. Next year, the province will increase the number of such households to 70,000. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 19 Nov 81 OW]

CSO: 4007/109

BRIEFS

TOBACCO PRODUCTION--Gansu Province held a provincial meeting on flue-cured tobacco production recently to inspect the fulfillment of this year's flue-cured tobacco production plans and to sum up experiences. Zhenyuan, Zhengning, Qingyang, Ning, Qingshui, Li, Gaolan and Gulang counties sowed a total of 12,000 mu of flue-cured tobacco this year. Total output is estimated at 30,200 dan. Peasants will get 2.6 million yuan of income. [SK290914 Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 24 Oct 81]

PRODUCTION RESOURCE INVESTIGATION--Since last winter, Ning County, Gansu Province, has conducted a general study and investigation on the production resources of agriculture, forestry and animal husbandry throughout the county. While carrying out the investigation, the county has also begun its capital construction work for production in line with the results of the investigation reports. According to statistics, during the period from last winter to this spring, its newly developed farmland reached over 14,200 mu. The county planted over 97,000 mu of trees. [SK181227 Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 16 Nov 81]

CSO: 4007/109

STRICT CONTROL OF RURAL LABOR MOVING TO CITIES DEMANDED

Guangzhou NANFANG RIBAO in Chinese 15 Sep 81 p 1

[Article: "Guangdong Provincial People's Government Issues Notice To Strictly Control Recruiting Workers From Farm Villages, Stop Farm Village Labor Forces From Blindly Migrating to the Cities"]

[Text] The Guangdong provincial people's government recently issued a "notice concerning strict control of recruiting workers from farm villages, demanding that each locality firmly stop farm village labor forces from blindly migrating to the cities.

The notice points out that some localities and units are disregarding party discipline, failing to follow state plans and policies, and are recruiting workers from farm villages on their own. Some have issued plans to recruit workers from farm villages without approval from the province. Some have expanded the scope fo recruiting workers from farm villages at will. Some cadres have violated policies, made contacts, used back-door methods, and thought of many ways to arrange for sons and daughters and relatives in farm villages to come to the city to work. If this situation is not rapidly and firmly stopped, it will affect the readjustment and reform of the economy, increase the burden of the cities and towns, and affect stability and unity. Therefore, strictly controlling the recruiting of workers from farm villages and firmly stopping farm village labor forces from blindly migrating to the cities have already become urgent tasks.

To conscientiously undertake this work well, the notice stipulates in particular: 1) Unify understanding, strengthen leadership, and speedily abolish the evil style of privately recruiting personnel and misusing farm village labor forces. Each locality, city and county must conscientiously organize inspection of the situation of recruiting workers from farm villages since last year. All units that privately recruit personnel in violation of policy must dismiss the recruits. In serious cases, the units will be disciplined. Units that have carried out the policy well should be praised. 2) Strengthen management, strictly carry out the review and approval procedures for recruiting workers from farm villages. In the future, farm village labor entering state-operated and collective units to work should be uniformly reviewed and approved by the labor departments. When there is a need to recruit permanent workers from farm villages or to replace vacancies due to natural reduction of personnel, this should be reported level by level to the provincial labor bureau for review and approval. The hiring of farmers for short-term work in a locality not included in hiring plans should be planned and reported level by level and should be reviewed and decided by the labor bureaus of the locality and the city of the employer. Hiring personnel from outside regions and for over 1 year must be reported for review and

approval by the provincial labor bureau. When urban construction needs farm village construction teams, the capital construction departments should review and make proposals, and the personnel should be uniformly arranged and recruited by the labor department. The use of farm village labor in Shenzhen and Zhuhai Prefectures must also be strictly controlled. 3) The scope of the policy for recruiting workers from farm villages this year must continue to adhere to related regulations issued by the Central Committee and the province, and it cannot be expanded or changed at will. Each unit that has already used temporary workers, contract workers and personnel who serve as workers and farmers and who are not included in farm village labor plans must also continue to clear the ranks and limit hiring according to related regulations issued by the Central Committee of the Chinese Communist Party, the State Council and the province. Without approval by the provincial labor bureau, they cannot change the status of these workers to permanent workers. In the future, in principle, farmers and workers not included in the farm village labor plans should no longer be hired.

9296
CSO: 4007/16

PROVINCE PROMOTES DEVELOPMENT OF FOOD INDUSTRY

Guangzhou NANFANG RIBAO in Chinese 25 Sep 81 p 1

[Article by Jin Wei [6855 4885]: "Our Province Rapidly Revives and Develops the Foodstuff Industry; From January to August, the Production Value of the Foodstuff Industry Increased 11 Percent Over the Same Period Last Year"]

[Text] Our province has rapidly revived and developed the foodstuff industry. From January to August, the production value of the foodstuff industry increased 11 percent over the same period last year. Now, in the food stores in the towns and villages, there are traditional brand-name foods rich in local flavors, such as liuhua brand refined granualted sugar, canned fruits, Guangzhou soda, fruit candy, cades, autumn festival moon cakes, sauces, soy sauce and various sweet fruits and preserves; the varieties are plentiful.

Our province produces a lot of sugar cane, peanuts, soybeans, cassava and fruits, and similar economic crops. The conditions for developing a foodstuff industry are good, so the foodstuff industry is widely distributed. Besides the industrial system, commercial enterprises, supply and marketing cooperatives, agencies of foreign trade, aquatic production, food grains, agricultural reclamation, and commune brigades all engage in food production. According to statistics compiled by concerned departments, the whole province has a total of over 3,600 foodstuff enterprises employing over 230,000 people; the main trades are processing food grains and edible oils, sugar refining, salt refining, processing meats, processing aquatic products, canneries, tobacco manufacturing and wineries. Last year, the production value of the foodstuff industry was about 4.1 billion yuan, constituting 18 percent of the total production value of the whole province's industries. Since the beginning of this year, because each locality undertook the production of daily consumer products in a big way, the foodstuff industry was placed in an important position, so development has been even faster. Take the whole province's first light industry system as an example: From January to July, the production value of the foodstuff industry was equivalent to about 61 percent of the annual production value of the system last year. Increased production was realized mainly in sugar, beer, soda, monosodium glutamate, dairy products, cold drinks, candies, and biscuits.

In doing a good job of foodstuff production, each locality paid attention to digging for potential in the enterprises so that the productive capabilities of the enterprises increased in multiples. For example, the production of Guangzhou soda developed relatively quickly in the past few years because of its good quality and low price, but the supply still cannot satisfy the market demand. During the summer season this year, the plant further dug for the potential of the enterprise and daily production reached

a high of over 570,000 bottles, creating the highest daily production record since the founding of the plant. At the same time, each locality also paid attention to increasing the varieties and actively test produced foodstuffs that had a local flavor in accordance with the demands of the masses for food with high nutrition, high protein, and high quality; and the production of brand-name foods that had not been produced for many years was revived. For example, Guangzhou city has four food factories producing baby foods. They also produce various nutritious dairy cakes and biscuits for children. To strengthen food sanitation, each locality has also established specialized inspection agencies to conduct strict inspection of foodstuffs sold on the market, and has firmly banned some foods that did not meet public health conditions. Each food production enterprise has also established sound systems for environmental health and personal hygiene.

The production of food serves the people directly. Investment in the development of the foodstuff industry is small and results can be quickly realized. The foodstuff industry consumes little energy, its accumulation is large, and it can satisfy the living needs of the people. Therefore, during the period of readjusting the national economy, the foodstuff industry must undergo a big development. The production value of our province's foodstuff industry constitutes nearly one-fifth of the total production value of the whole province's industry. It is a very important production department of consumer goods. But in the past, because of the influence of the "leftist" ideology, the development of foodstuff production was separated from raising the living standard of the people, and they even opposed each other, so the foodstuff industry was neglected. In recent years, the foodstuff industry has revived and developed, but as the purchasing power of the people increases and as tourism develops, the need for foods by the people will be higher and higher, and the production still cannot satisfy the needs of the market. Therefore, we must include the development of food production in the daily agenda, exert efforts to increase the production of foods needed by the people, increase products that are in short supply and traditional brand-name foods that have a local flavor, strengthen food sanitation and increase the quality of foods.

9296
CSO: 4007/16

COUNTY SCIENTIFIC PLANTING PROMOTES BUMPER RICE HARVEST

Guangzhou GUANGZHOU RIBAO in Chinese 24 Aug 81 p 1

[Article: "Popularize Scientific Planting, Overcome Natural Disasters; Total Yield of Longmen County's Early Crop of Paddy Rice Surpasses 100 Million Jin"]

[Text] Longmen County used many forms to help the farmers improve the level of scientific planting. This year, the early crop overcame serious natural disasters, and large bumper harvests of food grains, peanuts and soybeans were achieved. While the planting area of paddy rice was reduced by over 15,000 mu, the total yield surpassed 100 million jin, an increase of more than 6 million jin over the same period last year and an increase of 6 percent over the highest level in history. The total yield of peanuts and soybeans increased 1.5 million and 700,000 jin, respectively, over the same period last year, and both surpassed the highest level in history.

Up to the beginning of this year, over 80 percent of the production teams in Longmen County established the production responsibility system of mainly contracting production to the families or contracting large-scale work to the families. The county committee took measures to popularize knowledge of agricultural science in a big way in accordance with this new situation in the farm villages. The county, commune and brigade directly contacted some production teams and farm families with a definite foundation in scientific planting in different types of locations with different conditions to establish demonstration families and demonstration fields for popularizing advanced techniques. The whole county established a total of 340 demonstration families and over 2,400 mu of demonstration fields. At the same time, it organized each commune to conduct science popularization schools and technical lectures and established centers of information on agricultural techniques. Each commune brigade also organized mutual assistance families using a lane, a door or a court as the unit. In the organized group, the most able person served as the teacher; the advantages were used to supplement the shortcomings and the provide mutual assistance in techniques. In addition, the commune brigade helped spread knowledge of agricultural science. Through these activities, about 80 percent of the farm families of the whole county received guidance in scientific planting.

The broad number of farmers exerted efforts to gain scientific knowledge, consciously accepted advanced agricultural techniques, and created good conditions for popularizing scientific planting throughout the county. During the early crop this year, this county implemented the following measures to increase the yield: 1) It popularized superior varieties over large areas; the per mu yield generally increased 50 to 60 jin. 2) It renovated the method of fertilization, widely applied potassium fertilizers, and effectively solved the problems of the seedlings turning red. 3) It prevented and controlled diseases and insect pests in time.

Despite frequent disasters during this year's early crop, drought during the early period, above-average rain and low temperatures during the middle period, three floods during the late period, rice blast occurring over an area of 50,000 mu--the most serious year in history--and a density of yellow rice borers rarely seen during the last 10 years, large bumper harvests were still realized because the popularization of agricultural science was grasped well.

9296
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SOYBEANS PLANTED ATOP EMBANKMENTS AROUND RICE FIELDS

Guangzhou NANFANG RIBAO in Chinese 28 Sep 81 p 1

["Planting Soybeans On Top of Embankments Around Fields; Food Grains and Soybenas in Two Stories; There Are Food Grains and Money; There Is a Future In Doing It in a Big Way; Many County Communes in Shaoguan Prefecture Utilize Top of Embankments Around Fields To Plant Soybeans With Visible Results; This Year the Entire Prefecture Has Planted Soybeans in 760,000 Mu On Top of Embankments Around Fields; The Harvests All Belong to the Commune Members"]

[Text] Shaoguan Prefecture has greatly utilized the top of embankments around [rice] fields to plant beans. This year, 92 communes planted beans on top of embankments around fields. The area totaled over 760,000 mu. At present, the beans planted on top of embankments around fields are growing prosperously and a bumper harvest is in sight.

In the past, some places in Shaoguan Prefecture had the custom of planting beans on top of embankments around fields. After the Third Plenum, the prefecture committee proposed popularization of planting beans on top of embankments around fields in a big way, and ruled that the top of embankments around fields would be divided for the commune members to plant beans. At the time of harvesting the beans, some would be given to the production team, while most would be given to the commune members. But because the "leftist" influence was not clearly purged, commune members worried, and thus the results of popularizing the planting of beans on top of embankments around fields in 1979 were small. At the end of the year, the prefecture committee summarized this lesson, further relaxed policy, and proposed that the harvest of the beans planted on top of embankments around fields would all be given to the commune members, thus mobilizing the enthusiasm of the commune members. In 1980, the whole prefecture had over 654,000 mu of embankments around paddy rice fields planted with soybeans, constituting 22.4 percent of the area of paddy rice. The average per mu of embankments around fields produced 10 jin and 4 liang of soybeans; the total yield reached over 6.827 million jin. In 1981, the whole prefecture had 92 communes that planted beans on top of embankments around fields, constituting 39.3 percent of the total number of communes. The area covered over 769,000 mu, constituting 25.6 percent of the area of paddy rice. Among them, the six counties of Wengyuan, Nanxiong, Shixing, Renhua, Lechang, and Ruyuan planted beans more commonly, and some communes in Yindge and Yangshan also began to popularize this practice. At present, the beans planted on top of embankments around fields are growing prosperously and a bumper harvest is in sight. It is estimated that the per mu yield may reach 15 to 20 jin, and the total yield could reach 11 to 15 million jin. If we exchange 1 jin of soybeans for 1 jin 2 liang of rice, this would be equivalent to an increase of 20 to 26 million

jin of rice grains. This can produce a large amount of income. The masses said happily: Planting soybeans on top of embankments around fields makes two stories of food grains and beans, there are food grains and money, and there is a future in doing this in a big way.

The masses of Shaoguan Prefecture showed in productive practice that planting soybeans ontop of embankments around fields is characterized by less delicate planting and easy growth, the beans do not occupy cultivated land, plows and rakes are not used, less work is required, and the gain is large. Generally one crop is planted a year, but this means two crops a year. This is a production with a great potential and there are many benefits. One is the full utilization of land. The second is stable and high yields. The yield of beans planted on top of embankments around fields is high. Calculating on the basis of the area of uniform planting, the yield is higher than that of planting soybeans on dryland by 80 to 100 jin. The third benefit is that it increases income and increases the wealth of society. At all localities planted with soybeans on top of embankments around fields, each family harvests an average of 80 to 120 jin of soybeans a year, with highs reaching 400 and 500 jin. The fourth benefit is that it has imporved the life of the masses. Soybeans have many uses: They can be made into bean sprouts, bean curd, dried bean strips and many kinds of soybean products; they are nutritious, and they are foods that are welcomed by the masses. The fifth benefit is that it has promoted the production of paddy rice. Soybean is a leguminous crop. It has nodule bacteria which serve to fix nitrogen. Each year, when planting beans on top of embankments around fields, the embankments around fields must first be shoveled to return the embankments that had been planted with soybeans to the fields, so the soil is changed year after year, and with the addition of returning the vines of the bean plants to the soil, nitrogen and organic matter in the paddy fields have been increased, benefiting the growth of paddy rice.

9296
CSO: 4007/16

PROVINCE PROMOTES RAISING OF GRASS-FED ANIMALS

Guangzhou NANFANG RIBAO in Chinese 4 Sep 81 p 1

["Localities in Our Province Develop Herbivorous Animals in a Big Way; At Present There Are Over 3.9 Million Head of Cattle, Over 400,000 Sheep, and Over 900,000 Long Haired Rabbits"]

[Text] Guangdong Province is developing cattle, sheep and rabbits and other herbivorous animals in a big way. At present, the whole province has a total of over 3.9 million head of cattle, over 400,000 head of sheep, and over 900,000 long haired rabbits; among them, the number of cattle and rabbits have increased 6 percent, more than 30 percent over the same period last year.

Guangdong Province is rich in grazing resources, and the area of mountain slopes and grassland suitable for livestock is over 50 million mu. Of this, concentrated expanses of mountain slope grasslands, over 1,000 mu in size, not yet fully utilized cover over 15 million mu. Because the climate is mild, rainfall is abundant, plants remain green throughout the four seasons, and grazing grass is abundant, the amount that can support livestock is high; generally 10 to 20 mu of grassland can support one head of cattle, higher than that of the northern regions by over onefold, so the potential for developing herbivorous animals is great. In recent years, each locality has relaxed the policy, and cattle, sheep and rabbits raised by the collective and by the commune members privately have developed greatly. In Zhanjiang Prefecture in 1979, the number of draft cattle kept surpassed the highest level in history, and last year this increased 6.9 percent again. During the first half of this year, the number reached over 1.05 million head, an increase of more than 126,000 head over the same period last year. To support the commune members in elevating the quality of herbivorous animals, the livestock scientific research units at each level cooperated with the foreign trade and production departments to actively introduce superior breeding cattle from India, the Netherlands and New Zealand and thoroughbred long haired rabbits from West Germany to mate with local cattle and rabbits to propagate new varieties and to provide the market with superior quality meat, dairy products, furs and hides. At the same time, attention was paid to reforming and renovating livestock farms and mountain slope grasslands, and to solving the conflict of the competition for land between forestry and livestock production in order to facilitate promotion of the development of the livestock industry.

9296
CSO: 4007/16

BRIEFS

HAINAN SUGAR REFINING SEASON--All localities in Hainan have started the 1981-1982 sugar refining season from 18 November onwards. According to estimations of relevant departments, sugar production in the region accounts for more than 800,000 tons, which is more than 35 percent more than the last sugar refining season. All sugar refining departments have taken measures to ensure production in this sugar refining season. In their preparatory work, all localities have promoted the economic responsibility system and contract system so as to promote the peasant's enthusiasm. Transport departments are requested to strengthen leadership over motorcades in sugar refining plants and conduct ideological and political work for drivers so as to rectify their work style. [Haikou Hainan Regional Service in Mandarin 0330 GMT 22 Nov 81]

HAINAN PIGLET EXPORT--As of mid-November this year, Hainan Island has already exported 178,000 piglets and earned $3.27 million. These piglets were mainly reared in Linggao and Chengmai counties. Over the past 2 years, the region has exported a total number of 460,000 piglets, earning more than $8 million. [Haikou Hainan Island Service in Mandarin 0330 GMT 18 Nov 81 HK]

TEA PRODUCTION--According to the statistics of certain departments concerned, the total tea production in the province amounted to 260,000 dan as of the end of the tea production season, showing an increase of nearly 100 percent over last year. Since last year, various areas in the province have used 2 million yuan and a lot of equipment to help communes and brigades develop tea production. Some 40,000 mu has been developed into tea farms and field tending has been promoted in other old tea farms. [HK250737 Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 16 Nov 81]

LATE HYBRID RICE PLANTING--Hybrid rice is welcomed by the broad number of farmers because of its superiority in large panicales, abundance of grains, and high yields. The enthusiasm of the farmers of each locality for planting hybrid paddy rice continues to increase. According to statistics, in this year's late crop, the whole province planted a total of 3.8 million mu of hybrid rice, an increase of more than onefold over the late crop of last year. Shaoguan Prefecture planted over 1.4 million mu of hybrid paddy rice in the late crop this year, constituting 48 percent of the area of late rice. Zhanjiang Prefecture realized a large-scale increase in yield of hybrid rice in the early crop this year and planted over 1.5 million mu of hybrid rice in the late crop, an increase of fourfold over last year. The regions of Foshan, Zhaoging, Guangzhou, Meixian, and Shantou also actively carried out expanded experiments and conducted demonstrations well to accumulate experience for further popularizing hybrid paddy rice. [Text] [Guangzhou NANFANG RIBAO in Chinese 7 Sep 81 p 1] 9296

HUA COUNTY PEANUTS--The Hua County committee conscientiously implemented the contract production responsibility system for peanuts, and this year spring-planted peanuts produced a bumper harvest. Although the planting area was less than last year's by more than 1,100 mu, the total yield reached over 14.84 million jin, an increase of more than 2.2 million jin over that of the same period last year which reached the highest level in history, an increase of 18 percent. The average per mu yield was 257 jin, an increase of 42 jin over last year. The total yield and per mu yield both surpassed the highest level in history. Because Hua County implemented various forms of the production responsibility system, the enthusiasm of commune members was greatly mobilized. The commune members used many measures to assure full and strong seedlings, and laid a solid foundation for the bumper harvest of peanuts. The county committee held field meetings and technical classes in time; each commune and brigade also taught high-yielding techniques in planting peanuts to the commune members directly. The commune members thought of ways to overcome the many difficulties brought about by drought during the early part of the year and the abundance of rainfall during the latter part of the year, and thus achieved a bumper harvest of this year's spring peanuts. [Text] [Guangzhou GUANGZHOU RIBAO in Chinese 21 Aug 81 p 1] 9296

CSO: 4007/18

BRIEFS

SUGAR OUTPUT--Nanning, 19 Nov (XINHUA)--Guangxi Zhuang Autonomous Region has harvested some 4 million dun of sugarcane from its 1.7 million mu fields this year. They will yield 500,000 dun of sugar, 20 percent more than last year. [OW190918 Beijing XINHUA Domestic Service in Chinese 0015 GMT 19 Nov 81]

CSO: 4007/109

BRIEFS

BAOQUING COUNTY FLOOD DAMAGE--The Baoqing County CCP Committee and government in Heilongjiang Province have led the people to provide for and help themselves by engaging in production. The county's income from sideline production is 8.45 million yuan and is expected to surpass 10 million yuan by year's end. The county has suffered floods this year. About 1.5 million mu of cultivated fields have been inundated by floods, and 950,000 mu of fields have suffered a decline in output. It is estimated the county's grain output will drop 79.7 percent from the 1980 level. Agricultural income will decrease 60 percent. Under such a difficult situation, the county CCP Committee and government were not discouraged at all and led the people to restore production through their own efforts. They have exerted great efforts to broaden production avenues such as sideline production to increase income for peasants in flood-devastated areas. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 21 Nov 81 SK]

CSO: 4007/105

BRIEFS

WHEAT SOWING--Henan has basically completed wheat sowing. Up to 5 November, Henan has sown 59.17 million mu of wheat, which accounted for 94.8 percent of the area assigned in the quota. Apart from the three disaster-stricken prefectures of Xinyang, Zhumadian and Nanyang, the other prefectures have completed sowing. In 1981, since the policies have been implemented and since we have done a lot of preparation, the quality of wheat sowing has been good. Eighty-seven percent of production teams have practiced responsibility system in cultivating summer crops. The standard of farming has also improved. An average of 3.8 cubic meters of agricultural manure per mu has been used, which is 0.2 cubic meters more than last year. The amount of nitrogenous and phosphate fertilizer used has also increased. The area cultivating fine-strain wheat is 95 percent of the total cultivated area. At present, most of the seeds sown have already germinated. The situation is good. While promoting sowing wheat, all localities have also grasped sowing rape and the precautionary work against disasters. Four million mu of rape has now been sown. [HK250833 Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 14 Nov 81] Henan has completed the task of sowing 62 million mu of wheat. Prior to the sowing, various localities in the province have trained 1.52 million wheat-growing technicians. [Beijing XINHUA Domestic Service in Chinese 0247 GMT 15 Nov 81 OW]

SOYBEAN HARVEST--Zhengzhou, 14 Nov (XINHUA)--Henan Province has reaped a bumper harvest of soybeans from its over 17 million mu of soybean fields. According to the initial statistics of the provincial agricultural department, the total output of soybeans reached more than 2.64 billion jin, or 44 percent increase over that of 1980. At present, the province has already procured more than 120 million jin of soybeans, or 30 million jin increase over that of 1980. It is expected that 300 million jin will be procured this year. [OW161313 Beijing XINHUA Domestic Service in Chinese 0020 GMT 14 Nov 81]

COTTON PROCUREMENT--Zhoukou Prefecture in Henan Province has overfulfilled cotton procurement quotas. The total amount of cotton procured so far is 106 million jin. The prefecture has aroused the peasants' enthusiasm for selling cotton to the state by adopting various effective methods and correctly implementing the party's policies. Up to now, the whole prefecture has overfulfilled the year's cotton procurement quotas by 200 percent. [Zhengzhou Henan Provincial Service in Mandarin 1130 GMT 20 Nov 81 HK]

CSO: 4007/109

CHEN PIXIAN ATTENDS HUBEI RURAL SITUATION MEETING

HK260412 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 25 Nov 81

[Excerpt] The Hubei Provincial CCP Committee held a conference of prefectural and municipal CCP committee secretaries from 17 to 20 November, to analyze the rural situation in the province this year in a truth-seeking way, further unify and clarify the guiding ideology for rural work, and study questions of upholding leadership by the plans, grasping the current outstanding problems, strengthening party leadership and building socialist spiritual civilization. Comrade Chen Pixan and Han Ningfu made speeches.

The conference held: The situation in the rural areas has been very good and has developed rapidly in recent years. This year it could be said that agricultural production has basically revived after the disastrous year of 1980. It has been a better than average year. At the same time a number of new situations and problems have cropped up on our advance. The guiding ideology we must further make clear is, while continuing to implement the central authorities' series of rural economic policies and constantly perfecting the production responsibility systems, to further handle well the relationship between the state, the collective and the individual, and guide the peasants' enthusiasm into learning agricultural science and technology, promoting scientific cultivation, and improving management and stressing economic efficiency. By grasping this work, we can develop production, reduce production costs and achieve increased output and income, so that the rural areas can gradually become rich in a healthy way.

The conference pointed out: At present problems still exist in the guiding ideology for rural work. The core question is that of how to get right the relationship between the state, the collective and the individual. Certain places and comrades take too much thought for partial and unit interests and too little for the interests of the state and the whole. The conference held: In our mass viewpoint, we must have a correct, all-round Marxist viewpoint. Our guiding principle is to take simultaneous care of the interests of the state, the collective and the individual. If we just talk about representing the masses; interests in isolation from the interests of the state and the collective, we in fact can only represent the private interests of a few. So far as the peasants are concerned, they rely mainly on developing production, not on increasing the prices of agricultural and sideline products, to increase their income and improve their living standards. If the question of guiding ideology is not solved well, problems will occur in the work of delivering and procuring agricultural and sideline products. If products that

should be procured by and delivered to the state are not procured and delivered, this will directly affect industrial production, the living standards of people in the towns, the worker-peasant alliance, and also the overall situation in developing the national economy.

If our guiding ideology is not right, this will affect the development of agricultural production itself. For instance, as far as sown areas are concerned, we must stress accepting the guidance of the state plans. Under this premise, cropping should be arranged in a rational way in light of local conditions. In the work of constantly perfecting the agricultural production responsibility systems, we must pay special attention to guarding against and resolutely correcting erroneous behaviro of misinterpreting the responsibility systems and sabotaging andtaking possession of collective property.

The conference held serious discussions on planned cultivation, the procurement and delivery of second and third-category agricultural and sideline products, development of pigs and vegetables, and base figures for procurement and delivery of products. The conference laid special stress on strengthening party leadership and building socialist spiritual civilization. The participants unanimously held: to build socialist spiritual civilization, we must first have the best party work style. If the party work style is correct, we can change the atmosphere and mood of the whole of society. Hence, party organizatios at all levels must seriously study Comrade Deng Xiaoping's talk on correcting party work style, and put the correction of party work style on the agenda of the party committees.

CSO: 4007/109

BRIEFS

HYBRID RICE--Wuhan, 9 Nov (XINHUA)--Despite drought, cold dew, wind and other adverse weather conditions, Hubei Province has reaped a good harvest from 1.13 million mu of hybrid rice this year. Hubei Province began planting hybrid rice on a large scale in 1977. [OW091211 Beijing XINHUA Domestic Service in Chinese 0210 GMT 9 Nov 81]

RURAL SAVINGS INCREASE--Rural commune member's savings in Hubei Province have greatly increased. By the end of October, the amount of rural commune members' savings in the province had reached 450 million yuan, 45 percent more than in the corresponding period of last year. According to the statistics compiled by departments concerned, rural commune members' savings in the province in November and December this year will continue to increase. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 23 Nov 81 HK]

AGRICULTURAL PRODUCTS PROCUREMENT--According to the statistics compiled by the provincial supply and marketing cooperative, by the end of October, the total value of the province's second and third categories agricultural and sideline products procured reached some 490 million yuan and the province overfulfilled its quota for procurement for this year 2 months ahead of schedule. The quantity of these products procured was 16.1 percent more than in the corresponding period of last year. Wuhan, Huangshi, Shiyan, Shashi and Xiangfan municipalities and Enshi, Xiangyang and Xiaogan prefectures overfulfilled their procurement quotas for this year. The province did better in fulfilling its quotas for the procurement of second grade agricultural and sidelines products, such as raw lacquer, day lily and flue-cured tobacco, which are in relatively short supply. [HK180841 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 13 Nov 81]

CSO: 4007/109

BRIEFS

PIG PROCUREMENT--Recently, the Hunan Provincial People's Government demanded that all localities promptly take effective measures to procure pigs and ensure that there is sufficient supply of pork on the market. In its telegram and circular, the provincial people's government demanded that the people's governments at all levels seriously assign quotas for the procurement of pigs to production teams and pig farms. The basic-level meat procurement and marketing stations should actively motivate the peasants to sell more pigs to them. All localities must strengthen management over the market. Production teams and peasants who have not fulfilled procurement quotas must not kill pigs for themselves. The duty of butchers is to kill pigs for the state, the collectives and the peasants and they must not sell pork. Anyone who violates the regulations should pay tax in accordance with the provisional tax rules. The provincial people's government stressed that procurement quotas of pigs must be fulfilled before the end of this year so as to ensure that there will be a sufficient supply of pork during the new year. [HK250911 Changsha Hunan Provincial Service in Mandarin 2300 GMT 19 Nov 81]

CSO: 4007/109

BRIEFS

BUMPER HARVEST--This year marks the fourth bumper-harvest year for Xuzhou Prefecture, Jiangsu Province. Total grain output has broken the mark of 7 billion jin. Oilseed production this year surpasses last year's by more than 30 percent. Per-capita income distributed from the collective is expected to reach 110 yuan. [OW281031 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 26 Nov 81]

COUNTY AGRICULTURAL PRODUCTION--The masses in Shenyang County, Jiangsu Province, reaped an all-round bumper harvest in agricultural production this year. The total output of grain was more than 610 million jin, an increase of nearly 30 percent over the same period last year. The output of cotton increased by 20 percent and the output of edible oil by 600 percent. The cash distribution for commune members increased by more than 50 percent over last year. [OW241329 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 20 Nov 81]

XUZHOU PREFECTURE AGRICULTURAL PROCUREMENT--Commercial departments in Xuzhou Prefecture, Jiangsu Province, have already procured more than 20 million jin of edible oil and stored it in warehouses, nearly double that for the same period last year. They have also procured and stored more than 500 million jin of grains. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 20 Nov 81 OW]

CSO: 4007/109

BRIEFS

COUNTRY COTTON OUTPUT--Jiangxi's Jiujiang Prefecture produced more than 500,000 dan of cotton, 20,000 dan more than the record 1980 figure. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 25 Nov 81]

DUCHANG COUNTY COTTON PRODUCTION--By 15 November, the peasants in Duchang County, Jiangxi Province, had sold more than 39,270 dan of cotton to the state, overfulfilling this year's cotton procurement quota. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 22 Nov 81 OW]

CSO: 4007/109

LIAONING INCREASES TUSSAH SILK PRODUCTION

OW210918 Beijing XINHUA in English 0707 GMT 21 Nov 81

[Text] Shenyang, 21 November (XINHUA)--Liaoning Province, China's leading tussah silk producer, fulfilled 93.4 percent of its annual quota for the total output value of tussah silk industry by the end of October. This is 4.7 percent more than the same 1980 period, according to the Provincial Textile Department

The increase is attributed to a higher cocoon output and improved quality. Four counties in the province, each producing 5,000 tons of cocoons a year, and 32 people's communes, each with an annual yield of 500 tons, have been built into tussah silk producing centers.

Cocoon stations under the Provincial Silk Company have rendered technical help to rural communes for the breeding of silkworms, technicians from large silk mills offered technical guidance and helped train skilled workers at commune-run silk reeling factories.

Liaoning's cocoon output totalled 60,000 tons in 1980, the highest since 1949. Following a good harvest, the province produced 2,892.3 tons of raw tussah silk from January through October this year, 8.4 percent more than during the same 1980 period and 92.8 percent of the annual target.

In an effort to upgrade silk quality, tests on dyeing, printing and resin treatment were made at the big Dandong silk printing and dyeing mill earlier this year. Thus, within six months 90 percent of the dyed tussah silk met export standards instead of the previous 40 percent.

The province supplies 80 percent of the country's total tussah silk exports. With the improvement in quality, Hong Kong firms and firms from the Federal Republic of Germany have revised their orders for more silk prints.

This year the province has trial-produced 110 kinds of new silk products in 300 designs, including Jacquard silks and polyester-tussah fabrics.

CSO: 4020/36

BRIEFS

BUMPER HARVEST--This year Nei Monggol has had an all-round bumper harvest. Information provided by responsible departments indicates that although the sown grain area in the autonomous region was reduced by 1.3 million mu, the total grain output should exceed the historic high set in 1975. The total output of oil-bearing crops and sugar beets this year will be more than 20 percent over last year which was a bumper harvest year for both crops. Soybeans, broom corn millet, millet and other small coarse grains, all of which the people like to eat, are more plentiful this year than last. Commune members are saying, "The people are enthusiastic, the days are busy and the production responsibility system has brought grain, oil and sugar." Because of the bumper grain harvest, the communes have increased their stores of grain. At present the commune members are jubilantly and eagerly turning over much good grain to the state. There are a large number of households which have sold more than 5000 jin of wheat to the state. [Text] [Beijing RENMIN RIBAO 18 Oct 81 p 1]

OIL-BEARING SEEDS--According to statistics, the annual oil-bearing seeds output of Nei Monggol in 1981 was 580 million jin, an increase of 21 percent over the corresponding 1980 period. As of 20 November, Nei Monggol had procured 487 million jin of oil-bearing seeds. [SK260635 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 25 Nov 81]

PLUM OUTPUT--As of 20 November, Nei Monggol had procured 40.91 million jin of plums, overfulfilling the annual procurement plan by 12.4 percent. The farming acreage of plums in the region in 1981 was 3.64 million mu, an increase of 6 percent over 1980. Plum output was 457 million jin, an increase of 20.1 percent over 1980. [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 25 Nov 81 SK]

CSO: 4007/109

AGRICULTURAL RECLAMATION SYSTEM DEVELOPS DIVERSIFICATION

Beijing RENMIN RIBAO in Chinese 12 Sep 81 p 2

[Report by reporter Ma Yuqi [7456 3768 3823]: "Readjusting the Production Structure According to Natural Conditions and Practical Possibilities, Ningxia Agricultural Reclamation System Develops Diversification with Visible Results"]

[Text] After the Ningxia agricultural reclamation system readjusted the production structure, forceful development of diversification was realized, and the economic results were very visible. This year, various food grain crops and economic crops grew well. The total yield of summer food grains centered around spring wheat increased by more than 10 percent over last year's large bumper harvest. The varieties and the quantity of agricultural, livestock and sideline products increased, and the fresh milk satisfied the needs of the capital of the autonomous region, Yinchuan. Not only was the sugar supply sufficient for the region, it was also supplied to neighboring provinces. In some towns, mining areas and along traffic routes in the autonomous region, there are restaurants and sideline foodstuff marketing stands operated by the farm reclamation system. Last year, the number of enterprises engaged in the processing of agricultural, livestock and sideline products as raw materials developed to 18, with a total production value of over 16.6 million yuan, constituting 56 percent of the total production value of industries. This year, the production value of the processing industry using agricultural, livestock and sideline products as raw materials increased on a large scale again. Up to the end of June, the production value reached over 11 million yuan, an increase of 25.4 percent over the same period last year, constituting 79.2 percent of the total production value of all industries during the same period this year.

The 14 state agricultural and livestock farms belonging to the Ningxia agricultural reclamation system are distributed over an expansive area of the Yinchuan Plain in the eastern foothills of Helanshan. The soil is fertile, irrigation is convenient, there are over 1 million mu of grasslands and a fairly large number of water surfaces, the natural resources are very rich, and at the same time, there is a large labor force and the level of mechanization is relatively high. The area possesses superior conditions for the development of economic crops and diversification. But in the past, because of unilateral emphasis on food grains, diversification did not develop for a long time.

After the Third Plenum of the 11th Party Congress, the party committees at each level of the Ningxia agricultural reclamation system divided the 14 state farming and livestock farms into three economic zones in accordance with the natural conditions and practical possibilities. The land of the farms situated in the southern

irrigated region of the Yinchuan Plain is flat, suitable for planting paddy rice, wheat and miscellaneous grains and key development of the production of commercial grains and the production of oil-bearing crops. The various frams situated in the northern irrigated region are suitable for farming and livestock production; they have many natural lakes, and they mainly develop agriculture and are engaged in livestock production and cultivation of the precious beach sheep and aquatic products. In the Helanshan foothills in the western part of the irrigated region the farms are in forestry and livestock areas suitable for developing dairy cows, beef cattle, beach sheep and rabbits and other herbivorous animals. Last year, each farm undertook the development of planting and cultivation according to economic zones and achieved results.

To further hasten the development of diversification, this year the Ningxia agricultural reclamation system also took many concrete measures: It stabilized the area of food grain crops, implemented scientific planting, fully utilized the wasteland of each farm, the "land on 10 sides", planted beets, watermelons, sunflower and such economic crops, allocated a capital of 330,000 yuan to help the various farms in the nearby desert regions to build protective forests around farmland, timber forests and economic forests. It also appropriated funds to support the development of hops and the production of beef and long haired rabbits. It imported and popularized superior varieties of domestic fowl and other domestic animals. It helped each farm further make sound and perfect specialized contracting of diversified items and the responsibility system of linking production with remuneration.

9296
CSO: 4007/20

BRIEFS

WHEAT HARVEST--Yinchuan, 13 August--The region of the Ningxia Hui Autonomous Region irrigated by water drawn from the Yellow River overcame natural disasters. The 1.52 million mu of spring wheat and other summer food grain crops realized bumper harvests, the total yield increased nearly 10 percent over last year's bumper harvest. This year, aphids occurred early and strongly attacked and caused a serious threat to the growth of spring wheat. To combat the insect pests, the braod number of cadres of the farm villages and the commune members of each nationality took early measures; they caught the insects manually, sprayed chemicals, fought in the fields day and night, and controlled the aphids in time. At the beginning of July, high temperatures continued. To prevent damage by dry hot winds, each locality generally irrigated "wheat yellowing water" once within the 10 days before the spring wheat matured. [Text] [Beijing RENMIN RIBAO in Chinese 14 Aug 81 p 1] 9296

CSO: 4007/18

BRIEFS

SHEEP WOOL PROCUREMENT--Xining, 20 Nov (XINHUA)--By the end of October, Qinghai had procured 27.18 billion jin of sheep wool from herdsmen of all nationalities, fulfilling the state plan 2 months ahead of time. [OW241355 Beijing XINHUA Domestic Service in Chinese 0140 GMT 20 Nov 81]

CSO: 4007/109

BUILDING OF PROTECTIVE FOREST BELT ACHIEVES GOOD RESULTS

Xian SHAANXI RIBAO in Chinese 31 Aug 81 p 1

[Article by Wu Shitang [2976 1102 1016], Li Muquan [2621 3668 3123] and Gao Wancheng [7559 5502 2052]: "Develop the Spirit of 'The Foolish Old Man Who Removed the Mountain,' Benefit the Young Generation; Our Province's Planting of Protective Forests in the Northern Region Achieves Welcome Results"]

[Text] The planting of protective forests in the northern region of our province has achieved welcome results. During the past 3 years, this region has cultivated a total of over 660,000 mu and afforested over 8.5 million mu, planted over 300 million trees on land of the "four sides," and built a forest network of 5.8 million mu around farmland. The forest belt to break the wind and stabilize sand along the Great Wall in this region has now been built on a preliminary scale and parts of the unclaimed mountains and unclaimed slopes of the loess hilly regions have begun to green, thus providing a definite economic and ecological gain, controlling loss of water and soil in a definite area, and promoting agricultural and livestock production.

The northern region of our province belongs to the nation's "northwest, north and northeast" shelter belt system. It includes the windy and sandy regions along the Great Wall, the hilly regions in northern Shaanxi and the plateau north of the Wei River, including all of Yulin, Yanan, and Tongchuan prefectures and cities and the region south of the Wei River, the Xianyang Prefecture and the northern part of Baoji city, totaling 49 counties (cities, prefectures), covering a total area of over 166 million mu, including over 50 million mu of unclaimed mountains and deserts. The area suitable for afforestation covers 38.55 million mu. The natural conditions of this region are relatively poor: the ecological balance is poor, there is serious loss of water and soil and damage by wind and sand. Natural disasters occur frequently, the economy has long been backward, the life of the people is very difficult. Therefore, planting trees and of forestation in a big way to fundamentally improve the conditions for agricultural and livestock production in this region and to improve the ecological balance are urgent needs of the broad masses of this region. After the party Central Committee and the State Council decided to establish a protective forest system in the key regions suffering from wind and sand damage and loss of water and soil in the northwest, the north and the northeast in November 1978, and especially through the thorough implementation of the line, guideline and policy of the party's Third Plenum and by summarizing historical experience, the broad number of cadres and masses of this regional continued to deepen their understanding of the necessity, urgency and importance of this project to build a pro-

tective forest. Under the correct leadership of the provincial committee and the provincial government, they used the spirit of the "foolish old man who removed the mountain" to join in the great construction project that would benefit the young generations. For over 3 years, this region has mainly engaged in the following four aspects of work: 1) The northern Shaanxi area has carried out the agricultural production guideline of "simultaneous development of agriculture, forestry and livestock production, and while striving toward the realization of self-sufficiency and surplus in food grains, it has actively developed forestry and livestock production and gradually established the forestry and livestock base." 2) It has implemented the task of building a protective forest, preliminarily proposed 15 projects, and each county has carried out the planning of forestry construction. 3) It has grasped the use of the experience of selected units to promote the work in the entire area; and the province, the locality and county all have had their own key points. Last year, the province emphasized Yulin and Chunhua counties and again marked out 16 key counties. 4) It has developed scientific afforestation and planting of grass; exerted efforts to improve quality; implemented a combination of protective forests, economic forests, timber forests, and firewood forests; a combination of trees, shrubs and grass; and a combination of biological measures and engineering measures. At the same time, scientific experiments in comprehensive management of loss of water and soil was carried out in Mizhi and Chunhua Counties, and afforestation and grass planting by aerial sowing and prevention and control of diseases and insect pests were carried out in Yanan, Wuqi, Yichuan, Yulin and Jingbian. The practice of the past several years has proven that the construction of the protective forest in the northern part of our province must start out from the comprehensive management of the loess plateau to closely combine planting of trees and afforestation, planting of grass and construction of basic farmland, and water and soil retention before visible results can be obtained.

Recently, the provincial committee and the provincial government established eight concrete regulations to further build the protective forests in this region well, to hasten the progress in managing the loess plateau while implementing the [decision concerning several problems in protecting forests and developing forestry] issued by the Chinese Communist Party Central Committee and the State Council on an overall basis, asking the party and administrative departments at each level to grasp implementation of the various policies of forestry well on a key basis, stabilize ownership rights over mountains and forests, establish a sound forestry production responsibility system and zoning of private mountain land for commune members, mobilize the enthusiasm of the masses in planting trees and afforestation, popularize the science and technology of forestry in a big way, implement scientific afforestation, improve the quality of afforestation, and strive to build the protective forests of the "northwest, north and northeast" in our province faster and better.

9296
CSO: 4007/18

POLICY QUESTIONS ON COTTON PROCUREMENT, HARVEST CLARIFIED

Xian SHAANXI RIBAO in Chinese 1 Sep 81 p 1

[Article: "Responsible Comrades of the Provincial Committee Answer Reporters' Questions Concerning This Year's Cotton Harvest and Procurement and Related Policy Questions"]

[Text] Responsible comrades of the provincial committee answered questions posed by reporters of this newspaper concerning this year's cotton harvest and procurement and related policy questions.

Question: What are the differences between this year's harvest and procurement of cotton and those of past years?

Answer: This year, the growth of our province's cotton is good. The area of cotton fields has increased. In particular, cotton fields in paddy rice fields increased more than 400,000 mu. In addition, because of the further implementation and realization of the various guidelines and policies of the party in farm villages, over 90 percent of the brigades and production teams in our province's cotton-producing area implemented various forms of the production responsibility system. All this has resulted in a number of new situations and new problems in the harvesting and procurement of cotton. We must adapt to this situation and exert efforts to do the work well.

Question: What is our general guiding ideology in doing the work well?

Answer: The general guiding ideology of cotton harvesting and procurement is to pick cotton in time, to harvest carefully, to dry well, and to store the cotton properly. This will help in inspection of the true amount of the yield, prevention of loss, elevating the quality level, fulfillment of production contracts, and will further promote the realization of a sound production responsibility system.

Question: What is the general view in the province regarding the actual harvesting and procurement methods?

Answer: The general spirit is to start out from the actual situation and not to carry out "arbitrary uniformity." The method of harvesting and procurement of cotton should be a combination of collective procurement and procurement from families. In concrete terms, the production teams that link harvest and procurement with production but not with production value should maintain a unified picking time,

family picking, weighing in the fields, family drying, family storage, and family procurement, but the yield should be uniformly calculated by the production team. When implementing these methods, the brigade or production team should assign special personnel to go to the cotton procurement stations to register the quantity of procurement from commune members of their own brigade and team to facilitate accounting for the true yield. The two methods described must be grasped in a versatile manner, they should not be controlled overly tightly, they should not be made absolute, and the opinions of the masses must be respected. Even in the production teams that only link harvest and procurement with production, if the masses insist on procurement from the family, this should be allowed. Similarly, in the production teams that link harvest and procurement with both production and production value, if the masses request collective procurement, this should also be welcomed.

Question: This year, will the method of personal procurement of cotton by commune members regardless of the source of cotton be implemented again?

Answer: In accordance with the opinions of the cadres and commune members of the cotton regions, that method will not be practiced this year.

Cotton is a first category product. It is a commercial commodity centrally controlled by the state. The regulations issued by the State Council to the national supply and marketing cooperative concerning several problems in the present procurement of agricultural and sideline products must be implemented firmly. Cotton is subject to unified procurement and unified distribution by the supply and marketing cooperative. Cotton, indigenous cloth and indigenous yarn are not allowed on the market. No department can use yarn and cloth to exchange for the purchase of cotton. After new cotton enters the market, the industrial and commercial administrative and management departments at each level must further strengthen market control; private cotton gins and private ginning of cotton are not allowed. Individuals and private persons are not allowed to go to the villages and production teams to illegally purchase and exchange for purchase of cotton. Factories are not allowed to use yarn to exchange for cotton. Rewards for surplus production of production teams are not to include cotton. Opportunists must be severely dealt with; persons who inform and expose such illegal activities must be praised and rewarded. To do the work of harvesting and procurement of cotton well and in order to prevent loss of cotton, each production team can establish picking and procurement agreements through democratic discussion by commune members and can ask that all commune members abide by the stipulations of the agreements.

Question: Will this year's cotton exchange for purchase policy change?

Answer: The policy of exchange for purchase of cotton will continue. In concrete terms, the private cotton and cotton produced on private plots of commune members will be offered a higher price and will be awarded cloth ration tickets in exchange for the cotton submitted. But the private cotton and cotton produced in private plots can only be sold to the supply and marketing cooperatives, and other departments cannot use this method to exchange for purchase of cotton. The practice of exchange for purchase must be strictly handled, it must be carried out after the whole province has completed the procurement task and it must be carried out within the time uniformly arranged by the province.

Question: Does the province have any views regarding the link between food grains and cotton?

Answer: The planting of food grains for the readjustment of the distribution of cotton fields and construction of base counties for cotton production will not be changed for 5 years starting from 1981. Food grains used as subsidies for cotton farmers are now placed under the management of the localities, instead of the past practice of placing them under provincial management. Also, the method of contracting the work of producing food grain rations for cotton farmers has been implemented. Starting next year, the method of offering chemical fertilizers in substitution for food grain rations will be discontinued. Food grain rations will be uniformly appropriated.

9296
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BRIEFS

COUNTY GRAIN OUTPUT--The total grain output of Zhidan County in Shaanxi increased from 45 million jin in 1979 to over 80 million jin in 1980. [Beijing XINHUA Domestic Service in Chinese 0108 GMT 23 Nov 81]

AUTUMN HARVEST REDUCTION--Shaanxi Province had 37.36 million mu of autumn crops this year. Out of this 3.16 million mu suffered from flooding and more than 19.1 million mu was damaged by waterlogging. This accounted for more than 22.2 million mu or 59 percent of the total area. Consequently, the autumn grain harvest was reduced by 2.5 billion jin compared to last year. Cotton was reduced by 100,000 dan compared to 1980. The loss from other economic crops amounted to more than 170 million yuan. [Excerpt] [Xi'an SHAANXI RIBAO in Chinese 5 Nov 81 p 1]

CSO: 4007/110

WHEAT YIELD INCREASED BY SELECTION OF SUITABLE STRAINS

Beijing RENMIN RIBAO in Chinese 19 Sep 81 p 2

["According to the Fertility of the Land, Selecting Suitable Varieties, Dezhou Prefecture Achieves a Large-Scale Increase in Wheat Yield This Year"]

[Text] Correspondent Xu Hongling [1776 3163 1545] reports: Selecting suitable wheat varieties according to the actual situation of the fertility of the land was an important factor in Dezhou Prefecture, Shandong Province, achieving a large-scale increase in the yield of wheat this year. Recently, when arranging the work of autumn planting for this year, the party committee and government at each level in this prefecture further emphasized the selection of suitable superior varieties according to the actual situation at each locality.

The sowing area of wheat in Dezhou Prefecture is over 5 million mu; most of the land is infertile; 30 percent of the land is saline and alkaline in varying degrees. Some comrades always believed that the larger the planting area of wheat varieties requiring a high level of fertilization and irrigation, the better; the area of sowing varieties requiring a high level of fertilization and irrigation once reached over 80 percent of the total area of wheat. As a result, this seriously deviated from the actual situation in the localities. During the 10 years from 1971 to 1980, there were only 2 years in which the per mu yield surpassed 200 jin. In 1978, which had the largest scale of increase in yield, the average per mu yield was only 221 jin, an increase of 46 jin over the previous year.

During the past 2 or 3 years, this prefecture summarized the lessons gained in deviating from the actual situation and "arbitrary uniformity" in popularizing superior varieties of wheat. In 1979, the prefecture conducted a survey of the typical production of the various types of superior varieties of wheat and became aware of the principle: A strong man who is hungry can carry less of a burden than a weak man. Starting with the autumn planting last year, the local committee and the administrative office asked each unit to suit measures to local circumstances and to suit measures to the brigades in selecting superior varieties. The area of varieties requiring medium and low levels of fertilization and irrigation throughout the region expanded from less than 20 percent originally to about 40 percent. This was an important factor that produced an average per mu increase of 102 jin and a total increase of 350 million jin in the yield of wheat throughout the prefecture this year. Pingyuan County expanded the area of varieties requiring medium and low levels of fertilization and irrigation to over 50 percent in the autumn planting last year. The results of increased yields were visible. The average per mu yield of wheat on the 400,000 mu of the whole county reached 337 jin. The first and second production

teams of the Zhangqian Brigade of Wangcundian Commune in this county have very infertile land. During the autumn planting last year, the first team continued to use varieties requiring high levels of fertilization and irrigation. The second team changed to varieties requiring medium and low fertilization and irrigation. Under the same management measures, the first team produced a per mu increase of 50 jin this year, but the second team produced an increased yield of 150 jin per mu. Commune members of the first team said: A tractor without diesel fuel cannot run faster than a horse-drawn cart. We will never again select and use impractical seeds.

9296
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BRIEFS

COTTON PROCUREMENT--Shandong Province had procured 10,547,000 dan of ginned cotton by 22 November, a 99 percent increase over the annual procurement plan, 167,000 dan more than the amount procured last year. It is expected that over 12 million dan of ginned cotton will be procured this year. [SK240414 Jinan Shandong Provincial Service in Mandarin 2300 GMT 23 Nov 81]

COTTON OUTPUT--Heze, Liaocheng, Dezhou and Huimin prefectures in Shandong Province have reaped a bumper cotton harvest this year in spite of suffering from serious drought. Their total output is expected to be over 10 million dan, more than a 20 percent increase over the 1980 figure. The output surpasses the 1979 figure of the province by over 300 percent. In 1981, the prefectures have had 2.4 million mu less of farmland for grain production than in 1980, but their grain output surpasses that of 1980 by 1.5 billion jin. Therefore, per capita income in these prefectures is expected to be 124 yuan, a 30 yuan increase over the 1980 figure or almost a 200 percent increase over the 1978 figure. [SK231027 Jian Shandong Provincial Service in Mandarin 2300 GMT 22 Nov 81]

GRAIN PROCUREMENT--Taian Prefecture and Zibo Municipality, Shandong Province, overfulfilled the 1981 grain procurement target. As of 20 November, Taian Prefecture had put 459 million jin of grain in storage, and Zibo Municipality had put 180 million jin of grain in storage. In addition, Feicheng and Taian counties have marketed 100 jin of grain to the state. [SK250614 Jian Shandong Provincial Service in Mandarin 2300 GMT 24 Nov 81]

CSO: 4007/105

LU DADONG ADDRESSES RALLY ON SICHUAN FLOODS

HK170910 Chengdu SICHUAN RIBAO in Chinese 19 Oct 81 pp 1, 2

["Enhance Vigor and Unite in the Struggles for Greater Victories in Flood-Fighting and Relief Work" -- 14 October 1981 speech by Comrade Lu Dadong [7627 1129 2639] at the rally of advanced collectives and individuals of Sichuan Province in flood-fighting and relief work]

[Excerpts] Comrades:

Between summer and autumn this year, our province was hit by serious rainstorms and floods the likes of which had not been seen in 100 years, and they inflicted heavy losses on the state, collectives and people. Supported by the deep concern of the Party Central Committee and the State Council and the PLA units stationed in Sichuan and fraternal provinces, municipalities and autonomous regions, the party, government, army and people throughout the province closely united, and they have won great victories in their brave and stubborn struggles to conquer the floods. A great many advanced collectives and individuals have emerged in the course of fighting floods and carrying out production work, and they have displayed countless heroic and moving deeds. Those present at the rally represent hundreds of thousands of advanced collectives and individuals. On behalf of the Sichuan provincial party committee and people's government, I express a warm welcome and cordial greetings to all the comrades present here! I sincerely thank and salute the PLA and the party and government leading organs and the broad masses of the people in fraternal provinces, municipalities and autonomous regions for the support they rendered to our province in flood-fighting and relief work!

(I) The Basic Situation of Areas Hit by Particularly Serious Floods

In a matter of over 60 days from the second half of June to early September this year, our province was hit by rainstorms on six occasions. The first rainstorm hit the Miyi county from 26 to 29 June. The affected areas included 12 counties of Liangshan Zhou and Dukou municipality. The counties of Miyi, Huili, Huidong and Dechang were seriously flooded. The second rainstorm started between 1 and 3 July in the southwestern part of Yongchuan county and the northeastern part of Yibin prefecture with Yongchang county as the center, and this county was seriously flooded. From 12 to 15 July, the third rainstorm hit 135 counties in the province; there was a record of 50 to 100 mm of rainfall a day in 54 counties and 100 to 358 mm rainfall in 81 counties. The floods covered 119 counties while 53 county towns and 580 other towns were inundated. The most seriously affected

regions and municipalities are Mianyang, Chongqing, Chengdu, Neijiang, Nanchong, Yongchuan and Wenuiang. The large scale of the affected areas and the seriousness of the floods had scarcely been seen in the past 100 years. The fourth rainstorm hit the Wenuiang, Yaan and Leshan prefectures and part of the hilly regions around 20 July. The fifth rainstorm hit 91 counties between 12 and 25 August. As a result, 50 counties were again flooded while 5 county towns were submerged. The seriousness of the floods caused by the rainstorm this time was second only to the floods in mid-July. The most seriously affected prefectures were Mianyang and Nanchong. The sixth rainstorm hit 45 counties between 29 August and 3 September. Eighteen counties were flooded, three county towns were inundated and Mianyang prefecture was seriously affected.

For more than 2 months, the province was constantly hit by rainstorms. As a result, 135 areas (municipalities and prefectures) throughout the province were flooded, of which 51 were hit 2 times, 11 were hit 3 times and 1 was hit 4 times. More than 222,400 production team areas were flooded and about 20 million people were affected. Fifty-seven county towns and 776 other towns were submerged. The seven county towns of Jintang, Hechuan, Ziyang, Zizhong, Shehong, Nanbu and Wangchang were totally inundated.

Most floods occurred in the productive basin areas with dense population, and consequently they caused considerable losses to the lives and wealth of the state, the collectives and the masses. Statistics reveal:

1. The number of the houses that were submerged was more than 2.37 million, of which more than 1,534,000 collapsed (more than 400,000 were washed away). More than 1.13 million people were made homeless, 1,358 died and 14,509 were injured.

2. The acreage of crops hit by floods was 17.51 million mu, of which 4,596,000 mu yielded no crops (1,475,000 mu of farmland were turned to gravel beaches). Grain losses were more than 500 million jin and more than 148,000 domestic animals died or were washed away.

3. Many water conservation projects were damaged, including 45 reservoir embankments while 733 embankments were in various degrees of danger. In addition, 10.087 km of channels, 913 km of dike defense projects, more than 4,500 irrigation stations, 27,325 small reservoirs and 446 small hydroelectric power stations were damaged.

4. The number of industrial and transportation enterprises affected by floods and consequently had to suspend operations was 3,115. Hit by floods on several occasions, more than 40 sections of the railway beds of the Chengdu-Chongqing, Baojin-Chengdu and Chengdu-Kunming lines were damaged and all traffic on these railways was suspended. Two bridges of the Chengdu-Kunming railway were damaged by sudden mud-rock flow. The number of roads above prefectural level that were broken off throughout the province was 523; and 324 bridges, 3,063 culverts and 2,344 points of roadbeds were damaged while cave-ins affected a total of 3.8 million cubic meters. The floods damaged 45 harbors and 124 boats. With regard to electricity, six transformer stations and one power station were inundated, the supply of electricity of 31 high-voltage power transmission lines was cut off, and operation of 446 long-distance telephone lines and 81 telegraph lines was suspended.

A number of financial and trading enterprises also suspended operations because of the floods.

5. Throughout the province, 10,619 primary schools were affected by the floods, of which 370 schools were washed away. The total area of the schools that were damaged by floods was 2.56 million cubic meters; other losses included 180,000 sets of desks and chairs. All these affected the studies of 1.3 million students. The health and medical units affected by the floods were 1,302.

Initial statistics showed that direct economic losses throughout the province amounted to more than 2.5 billion yuan; financial revenues decreased by more than 500 million yuan while grain output decreased by more than 3 billion jin.

(II) The Great Achievements Made in Flood-Fighting and Relief Work

It was an urgent task for the industrial and communications fronts throughout the province to restore the production of the industrial and mining enterprises. Under the unified leadership and command of the Provincial Party Committee and government, the enterprises launched a socialist coordination movement. The enterprises that were not affected by floods helped those affected, the lightly affected helped those seriously affected while various systems and trades supported their related ones. At the same time, the broad masses of the people discussed the question of "what is to be done after the floods" and in mid-September they carried out the activity of "100-day emulation campaign for making contributions." Measures were taken to further implement and improve economic responsibility systems and readjust related policies. Thanks to a series of measures, by the end of August, 96.8 percent of the enterprises restored production, of which 84.8 percent were able to restore their production to the level prior to the floods and even higher than this level. The Neijiang Textile Mill is a typical example. It is one of the backbone enterprises of our provincial textile industry. The water in the area of the mill was 1 to 3 meters deep, and all its machinery equipment and warehouses were inundated. Under the unified command and leadership of the mill party committee, the broad masses of the staff and workers fought stubbornly to restore production. With a sense of responsibility in sharing weal and woe with the state and with a feeling of glory to make their contributions in restoring production, the staff and workers lost no time working day and night. They worked for a dozen hours every day to clear debris, remove rust from equipment and repair equipment. Supported by other textile mills and electrical departments across the province, the Neijiang Textile Mill was able to restore production in an all-round way in a matter of 43 days, 1 month ahead of schedule. The Chongqing cigarette factory was also seriously affected by floods and it planned to restore production in 1 month. Thanks to the efforts of all the staff and workers, this factory was able to restore production in 10 days. Production in the first day reached the level of that prior to the floods and that in the second day hit a new daily record. Thanks to the concerted efforts of the staff and workers across the province, the industrial production throughout the province was improved in September with a total output value of 2,336 billion yuan, an increase of 5.7 percent over the same period last year. The figure also represented the highest monthly output value this year. The profits handed over to the higher-level department also increased considerably.

They implemented a series of flexible policies in rural areas to promote production in a big way: The affected people's communes and production teams readjusted

responsibility production quotas so that commune members would be able to overfulfill their production quotas through hard work. With regard to the land that was not affected by floods, it was stipulated that those who sowed will reap the yields. With regard to the land that was damaged by floods, a method similar to that of paying debts through labor was introduced, while peasants were organized to recultivate. Grain purchasing, agricultural taxes and taxes for industrial and sideline production in the affected areas were also readjusted. Thanks to party policies, the initiative of the broad masses of people in restoring production was mobilized. An upsurge of developing production through the efforts of the masses was soon launched in the affected areas throughout the province. More than 7 million mu farmland were sown with late autumn crops and more than 500,000 mu of the affected land were harnessed. Field management over early spring crops was strengthened and measures were taken for diversified economic development and industrial and sideline production. For example, the affected people's communes and production teams in Suining Prefecture were organized to engage, according to their specific conditions, in more than 10 kinds of industrial and sideline production such as panning alluvial gold, sieving sand, selecting and producing limestone, making bricks, transporting items, fishing and weaving. In a matter of 1 month after the floods, they had more than 10,000 yuan in cash income, with an average of over 10 yuan for the people in the affected areas. Looking at the whole province, there is no doubt that the province was hit by very serious floods this year. Yet the output of mid-season rice increased by 1.5 billion jin, and it is hoped that total grain output this year will be able to reach last year's level while gross agricultural output value increased by about 3 percent over the previous year. To be able to maintain the highest agricultural output in history in the year with serious natural disasters is no doubt a great victory.

Following the floods, the Provincial Party Committee and government regarded stabilizing prices as an important relief task. Measures were taken to transport goods and control prices. For example, in order to resume the supply of vegetables in cities, the province transferred over 10 million jin soybeans for making bean products, and subsidies were given with regard to the prices of vegetables so as to stabilize prices. At present, the supplies of grain, edible oil, pork and coal are ample and their prices are basically stable. Grain prices in free markets in some places are lower than the prices before the floods. The supply of vegetables has also been improved.

When flood-fighting and relief tasks were being launched, various localities strengthened public security work. Public security men were active in maintaining social order, and thanks to their efforts the number of criminal cases and public disputes was lower than in the days before the floods. Common cases in July were 12.4 percent lower than in June while major cases dropped by 17.3 percent. People in both rural and urban areas have peace of mind, social order is stable, and there has been no outflow of people. With high spirits, the broad masses of cadres and people in the affected areas concentrated their efforts in production and in rebuilding their villages and towns, and they are fully confident of wresting back what was damaged by the floods.

Why were we able to do so much work and make such great achievements in a fairly short time in the face of the very serious natural disasters? First of all it was because we gained great strength from the spirit of the Third Plenary Session and the Sixth Plenary Session of the Party Central Committee, the concerns,

encouragement and important instructions of the Party Central Committee and State Council. It was because the party organizations at various levels were able to display their roles as combat bastions; it was because of the tremendous support of the PLA units stationed in Sichuan; it was because the broad masses of people displayed endless wisdom and strength, and it was because of the unmatched superiority of our socialist system. The floods were not a good thing to us but they provided a serious test. Economically we suffered heavy losses but politically we won great victories. The arduous struggles in flood-fighting and relief work once again proved that our party is a great party, our army is a great army and our people are a great people. Proceeding from their own experiences, the broad masses of people said that the Communist Party is good, the PLA is good and the socialist system is good.

(III) Enhance Vigor and Continue To Work Hard for Greater Victories in Flood-Fighting and Relief Work

Our province has achieved very great victories in flood-fighting and relief work. But it remains an arduous task for us and we will meet many difficulties in making up for the losses caused by the floods. The Provincial Party Committee held that although the floods happened this year, their effects will come to the fore in the next few years and we must clearly understand this situation. Therefore we must enhance our vigor, work conscientiously and resort to the zeal we displayed during flood-fighting and relief work and be resolute in striving for still greater victories. According to the present situation, we must carry out the following tasks.

First, we must uphold the principle of self-reliance in promoting production and carry out the task of restoring production and rebuilding.

One of the main reasons that we were able to make such great achievements during the previous period is that we conscientiously implemented the directive of the "two possible means" of the Party Central Committee. As soon as the floods occurred, the Provincial Party Committee pointed that reliance on our own efforts and reliance on the state were two different principles. The implementation of these principles will bring two different results. Practice during the previous period showed that by persisting in self-reliance, the more we worked the broader our road became, the more methods we used and the more confidence people gained. In order to display the initiative of the cadres and masses of the affected areas, the Provincial Party Committee and people's government readjusted and relaxed various economic policies in the affected areas to enable the people in these areas to have time to recuperate and to speed up production. We must continue to implement all these good policies. At present it is necessary to check in an all-round way the implementation of these policies and to find out which policies have been implemented, which have been implemented insufficiently and which have not been implemented at all and to find out the results. That is to say, we must find out whether problems are caused by the policies themselves or by the leadership. All these problems must be analyzed objectively and must be resolved. In short, we must carry out our tasks well and solve problems one after another.

Second, we must exert efforts in every possible way to fulfill the tasks for industrial and agricultural production and financial revenues this year.

To do a good job in the economy is the material foundation for doing a good job in relief work. We must overcome difficulties and meet the demands put forth by the Provincial Party Committee and people's government of "two maintainings" (maintaining last year's industrial and agricultural production level) and "three stabilities" (stability in prices, people's minds and the social order). The current situation demonstrates that it is imperative for industry and agriculture to exert every effort to perfect the responsibility system and particularly to boost the morale of the people. As our agriculture has been affected by floods, we have lacked raw materials for industry and energy and this situation has presented us with difficulties. But this is only one side of the problems. Taken as a whole, we must understand that the broad masses of the people are enthusiastic. Therefore, once we are able to exert efforts and carry out our work conscientiously, we will be able to overcome difficulties and fulfill our tasks. With regard to industry, as long as we are able to exert efforts, we will no doubt be able to find work even if there are no tasks. We will also be able to save energy and find a way to make up for the shortage of raw materials. This can be proven by the fact that our industrial production increased drastically in September. We must strengthen ideological and political work and be confident that we can surmount difficulties and develop production through hard work. We must also be resolute in overcoming ideological slackness in leadership, supporting the advanced, developing a healthy atmosphere and further developing the 100-day emulation campaign for making contributions, so that in the last 3 months of this year our industrial production will be able to increase every month. We must also make active preparations for production in 1982 so that next year we will be able to start production with flying colors. In particular, it is imperative at present to concentrate our efforts on autumn harvesting and sowing. We must also work meticulously to collect every bit of grain for the granary and to sow well late spring crops so that we will be able to increase the output of various late spring crops next year, increase total grain output to 1.5 to 2 billion jin and considerably increase the output of various industrial crops. Various trades must work hard to increase income and save on expenses so as to fulfill this year's plan for financial revenues. This work is vital for us in determining whether we can do a better job in production and other tasks next year.

Third, we must take further measures to arrange well the life of the masses and ensure that the people in the affected areas will be able to pass the winter safely.

The situation in our province after the floods is so excellent that it has had a great impact both at home and abroad. We must continue to consolidate and develop this situation and persist in doing a good job in the affected areas. As the cold winter season is approaching, it is imperative to step up the building of houses so as to ensure that the hundreds of millions of the people in the affected areas will be able to pass the winter safely. This work is an important criterion for testing whether we are doing a good job in relief work. Thus, we must in no way slacken our vigilance. First of all, we must further solve well such problems as providing food, clothing and housing for the people in the affected areas. All the affected prefectures must check on the livelihood of each household in the people's communes and production teams and solve their problems. Although most primary schools and secondary schools in the affected areas have resumed classes a number of problems such as providing heating facilities and teaching materials are yet to be solved. Also we can in no way relax our work of treating and preventing

diseases. The second task is to distribute and use well the limited goods and funds for the affected areas so that they are properly used. This means that they must be used economically, rationally and according to importance. The distribution and use of such goods and funds must be open to the public, while special funds and goods must be used properly and they cannot be used for other purposes. Party members and cadres who violated the rules defined by the Party Central Committee and the Provincial Party Committee, who expanded arbitrarily, embezzled, pilfered and robbed and who ate and drank to their content and lived extravagantly on various pretexts at the expense of providing relief funds and goods must be sternly investigated, punished and even brought to justice. The third task is to continue to do a good job in social security. We must understand that although the situation of social security in our province has taken a favorable turn while criminal cases have been dropped, the situation has not yet been basically improved. We must follow the spirit of the discussions on the security of the five cities and seize this opportunity to make further progress in doing social security work. As for the fourth task, we must continue to basically stabilize prices. From the point of view of the whole province, prices are stable; yet we cannot treat this matter lightly in the affected areas. On the contrary, we must strengthen our work in various sectors so as to ensure stable prices. This is not only an economic matter but also an important political matter. In the affected areas in particular, whether or not prices are stable is of great political significance.

Fourth, we must publicize in a big way the heroic and exemplary deeds performed during the flood-fighting and relief work and push forward the building of the socialist spiritual civilization.

Fifth, we must conscientiously sum up the experiences and lessons in flood-fighting and relief work in an all-round way. As our province was hit by serious floods that affected wide areas and caused heavy losses, there are many experiences and lessons that have to be summed up. This situation has drawn the attention of our province and the rest of the country. RENMIN RIBAO has set up a special column for the purpose of launching discussions, and it has carried many articles that have enlightened us. The Provincial Party Committee has discussed this question at several meetings, and it was agreed that there are many lessons to be drawn. These lessons include excessive logging of forests, unbalanced ecology, lack of unified management over rivers, lack of full consideration for natural disasters and the making of more efforts to preventing drought rather than floods. Accordingly, it is necessary for us in the future to have full consideration when we are fighting natural disasters. That is to say, we must prevent both drought and floods so that we will not be at a loss when natural disasters suddenly occur. By doing so, we will be able to avoid losses. The work of protecting forests as well as afforestation must be carried out soon; otherwise our future generations will suffer. Recently the provincial government convened a meeting on forestry work, while further measures have been taken by various sectors. All localities must do a good job in this aspect. Just as in doing a good job in introducing production responsibility systems in agriculture, it is also imperative to do a good job in introducing the rights over hills and forests and forestry production responsibility systems. From now on, we must work hard in this aspect for 3, 5 or even 10 years so that our province will be able during this century to restore its forest coverage to the level of the early liberation days. We must also pay attention to managing and harnessing rivers and overcome the anarchic situation in which there is no unified planning and everyone is only concerned with his own affairs. The province has set up a command headquarters for river management, and it is now working out regulations for this management that will be announced and implemented after approval by the Provincial People's Congress.

'SICHUAN RIBAO' URGES PLANTING TREES ALONG ROADS

HK230856 Chengdu SICHUAN RIBAO in Chinese 6 Nov 81 p 2

[Article by Fan Kun [5400 2492] and Meng Jining [1322 1015 1337]: "Properly Solve the Problem of Planting Trees Along Roads"]

[Text] Through the endeavors of the masses in Sichuan in planting trees along roads, by the middle of the 1960's, the mileage of roads along which trees were planted had already reached 36 percent of the total mileage of roads in the province. During the 10 years of upheavals, the trees planted along roads were unscrupulously felled, and the mileage of afforested roads dropped to 22 percent. Over the past few years, although the investment in planting trees along roads has increased proportionally with the increase in the mileage of road built, the trees planted have kept on disappearing every year. The survival rate of the young trees has been low and unscrupulous felling of trees for timber has still been serious. According to incomplete statistics by the eight road maintenance general depots of Chongqing, Nanchong and Liangshan and by Zigong Municipality and Neijiang Prefecture, some 70,000 fully grown trees had been illegally felled from autumn last year to spring this year. The trees along the 10 to 15-kilometer section of the Sichuan-Hunan road and the section of the Qijiang-Changshou road in Dianjing County were originally fully grown and formed green belts; but now there are only a few of them left. Not only have the trees that were planted some time ago along the roads been mostly felled, but most of the young trees planted along the roads were also sabotaged. From winter last year to spring this year, Sichuan invested 1.1 million yuan and planted 4.3 million young trees, but now there are only some 50,000 trees left.

This year, Sichuan suffered serious floods. One of the major reasons is that the forests in the upper reaches of the rivers were sabotaged. The same situation occurred along the roadways. The torrential rain last July and August also seriously damaged our roads. The 270 major highways and 1,471 county roads in various prefectures, municipalities and autonomous prefectures including Mianyang, Yongchuan, Neijiang, Yaan, Nanchong, Liangshan, Aba and Chengdu were ravaged by floodwaters. As a result, the roadbeds collapsed, the bridges were destroyed, the pavements were eroded and transportation was disrupted. All of these were in fact attributed to the damaged forests and trees along highways and roads, the lack of vegetation protection and the unstable roadbeds.

Why has the mileage of afforested roads been greatly reduced? Why have the young trees been unable to mature and the old trees been unable to thrive? Apart from

the harm caused by the 10 years of upheaval, there are also the following major reasons: First, the policy has not been implemented and the forest rights have not been clearly defined. In the past, the planting of trees along roads were mainly carried out through cooperation between the state and the communes. The highway departments signed contracts with the communes and brigades. The highway departments supplied the tree saplings and the communes and brigades along the highways were mainly responsible for the planting and management of trees. They received according to regulations subsidies for the management and protection of young trees and also carried out systematic felling and reforestation. The earnings were then shared between the highway departments and the communes and brigades on a "30 percent-70 percent" basis. This method is suitable for some localities. However, in most places, many problems have arisen. People have aimed only at earning money and while disregarding specifications and quality. The survival rate has been very low. In particular, in the felling of forest trees, some cadres and masses have misinterpreted the principle of the "30 percent-70 percent" share and have gone so far as to divide the forest rights also on a "30 percent-70 percent" basis. This has resulted in very serious unscrupulous felling of trees along roadways. Second, the problem regarding the reserved land on both sides of roads has not been properly solved. Despite the fact that the state has stipulated that 3 meters of land on both sides of roads are reserved for the state in order to allow space for road maintenance work, afforestation and possible expansion of roads, yet many communes and brigades have forcibly occupied the reserved land along roads in order to expand the areas of their farmland. Some have even distributed the reserved land along the roads to commune members as their private plots or plots for production contracts. These have seriously affected the growing of saplings and the planting of trees along roads. Third, the management organs have not been established on a sound basis. No one is put specially in charge of the management and maintenance work and the responsibility system has not been seriously established. Moreover, as rewards and punishments are not clear and as the law is not strictly enforced, the masses' enthusiasm in afforesting along roads has also been impeded.

In order to quicken the pace of planting trees along the roads in Sichuan and afforest as quickly as possible the some 50,000 kilometers of the some 82,000 kilometers of roads in the province which are suitable for tree-planting, we think that we should do a good job of promoting the following tasks:

First, we must solve the problem regarding our understanding of planting trees along roads. In promoting afforestation along roads, we should not only consolidate the roadbed, ensure traffic safety and beautify the environment, but we can also regulate the climatic conditions, maintain an ecological balance, reduce soil erosion, prevent the hazards of wind and wind-blown sand and protect the cultivated land, thus helping to promot a stable and increased output in crops. In terms of economic construction, by fully utilizing the trees planted on both sides of roads, we may increase the production of timber and other forestry and sideline products, help to solve the problem of timber supply and bring into play a multitude of economic effects. For instance, assuming that an average of 500 to 800 trees are planted in each kilometers, if we carry out selective felling of the fully grown trees 10 to 15 years later, we shall be able to get 100 to 150 cubic meters of timber per kilometer. On the basis that our province now has 50,000 kilometers of roads which are suitable for tree-planting, if trees are planted over the entire span, we shall be able to produce 500,00 cubic meters of timber annually from the trees

along roads. Therefore, the party committees and governments at all levels must specifically strengthen their leadership over the work of planting trees along roads, quickly adopt effective measures, seriously implement the State Council's "Circular on Protecting Forests and Preventing Unscrupulous Felling of Trees," the PRC "Forest Law" and the "Report on Protecting Forests and Preventing Unscrupulous Felling of Trees Along Both Sides of Roads" of the Ministry of Communications which was approved and transmitted by the State Council, widely publicize the significance of afforesting roadways and educate the masses to consciously cherish the trees along both sides of roads. The communications departments at all levels must include the work of planting trees along roads in their important agendas, and assign people to take charge of the work. The highway maintenance depots and county road maintenance depots and squads must grasp promoting the planting of trees along roads as an important task. They must both have the power and accept this responsibility in order to achieve relatively good results.

Second, we must resolutely implement the regulations of the State Council and the provincial authorities concerning the rights of the reserved land along roads and the trees along roads and enforce the regulation that 3 meters of the land on both sides of roads belong to the state and no one is allowed to forcibly occupy them. For those who have forcibly occupied them, they should restitute the land. As for places where the land was not delimited in the past, appropriate lines should be specifically drawn according to the relevant regulations on land utilization in order to facilitate the planting of trees on both sides of the roads and other road maintenance work. The planting of trees along both sides of the roads should be organized by the local party and government leadership and departments in charge of the roads. The afforestation work along the major highways should be carried out and maintained by the departments in charge of roads; and all the rights belonged to the state. The afforestation work along the county roads should be carried out in cooperation by the state and the communes. The forest rights belonged to the state, while the earnings may be shared. As for the commune roads, the policy of whoever plants the trees owns them should be implemented. For trees which are planted in cooperation along both sides of the roads in the past, the original regulations for the distribution of profits will be followed. However, for those that the ownership rights and the distributions of profits are not clear, they should be quickly resolved.

Third, we must formulate plans for systematic felling and establish the authority for the examination and approval of the felling of trees along roads and put it on a sound basis. No matter by what systems the trees are planted, the systematic felling which is to be carried out among all the trees along the roads must strictly follow the procedures to seek for approval. The provincial departments in charge of the roads will authorize the systematic felling of trees along major highways, while the prefectural departments in charge of the roads will authorize the systematic felling of trees along county and commune roads. Those who do not get the approval and carry out unscrupulous felling will shoulder legal responsibility and restitute the economic losses caused.

Fourth, we must resolutely implement the PRC "Forest Law" and strictly implement the policy that those who render meritorious service in protecting trees will be rewarded and those who sabotage the trees will be punished. For those who have scored outstanding achievements in afforesting the roads, they should be given the

necessary rewards; but for cases of unscrupulous felling of trees along both sides of the roads, the local public security, political, legal and forestry departments should coordinate with the highway and communications departments and seriously investigate and handle them. They should be given criticism, education and punishment according to the seriousness of the cases. For cases which are really serious, they should be penalized according to law. Only by administering the forests on the basis of law is it possible to effectively consolidate and develop the achievements in the afforestation along roads.

CSO: 4007/109

BRIEFS

ANIMAL HUSBANDRY--Urumqi, 12 Nov (XINHUA)--The Xinjiang Uygur Autonomous Region, one of China's five major livestock breeding areas, is now raising 32.94 million animals, a historical record, according to the region's animal husbandry bureau. The development of animal husbandry was aided by new policies put into effect in the past four years. These include allowing herdsmen to keep private livestock and assumption of personal responsibility for herds in their care, the bureau said. Ten million head of stock are in the private sector, approximately one-third of the region's total. Each family of the pastoral communes owns 10 to 20 head in general. The number of fine wool sheep, improved breeds of sheep, fine breeds of cattle and Ili horses in the herds has increased. There are now 8.54 million improved breed fine wool sheep and 1.97 million lambs being raised for pelts in the region. These account for 50 and 71 percent of the animals in these categories being raised throughout China. There are 280,000 head of fine breed cattle in Xinjiang. [Excerpt] [OW131343 Beijing XINHUA in English 1201 GMT 12 Nov 81]

COTTON PROCUREMENT--Urumqi, 15 Oct (XINHUA)--Cotton is being harvested in Xinjiang. From early September to early October, 250,000 dan of ginned cotton had been procured in the region. This was more than 40 percent above the amount procured in last year's corresponding period. [OW201227 Beijing XINHUA Domestic Service in Chinese 0137 GMT 15 Oct 81]

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END

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No. 178

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JPRS 79642

11 December 1981

CHINA REPORT

AGRICULTURE

No. 178

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

State Farm Forestry Conference Concerns Aired
(Lin Chu; ZHONGGUO NONGKEN, 24 Sep 81)..... 1

State Farms Take Steps To Turn Losses Into Profits
(ZHONGGUO NONGKEN, 24 Sep 81)..... 3

Xinjiang State Farms, by Mao Naishun
Fuijian State Farms, by Lei Yuxin

Export of Animal Byproducts Increased
(XINHUA, 28 Nov 81)..... 11

Briefs
Changjiang River Soil Preservation 12

Anhui

Briefs
Huaiyuan Grain Production 13

Fujian

Study of Solar Energy Distribution, High Rice Yield Reported
(Cai Jinlu; FUJIAN NONGYE KEJI, 10 Aug 81)..... 14

Briefs
Xiapu County Agricultural Production 23

Guangdong

Huiyang Prefecture Aims for Economic Breakthrough
(Guangdong Provincial Service, 29 Nov 81)..... 24

Heilongjiang

Briefs
State Farm Afforestation Statistics 25

Henan

Bumper Summer Grain Harvest for State Farms Reported
(Henan Provincial Farm and Land Reclamation Bureau;
ZHONGGUO NONGKEN, 24 Sep 81)..... 26

Jiangsu

Briefs
Funing County Agricultural Harvests 27

Jilin

Meeting Focuses on Responsibility Systems
(Jilin Provincial Service, 24 Nov 81)..... 28

Briefs
Tobacco Procurement 29

Liaoning

Briefs
Shenyang Grain, Vegetable Subsidy 30
Agricultural-Product Markets 30
Grain Procurement 30
Animal Products 30

Nei Monggol

Briefs
Grain Procurement 31
Privately Owned Livestock 31

Ningxia

Briefs
Bumper Summer Grain Harvest 32
Muslim Foodstuff Industry 32
Agricultural Output 32

Qinghai

Briefs
Madoi County Livestock Production 33

Shaanxi

Methods of Improving Soil Conditions Described
(Wang Li; SHANXI RIBAO, 27, 30 Aug, 3 Sep 81)..... 34

Briefs
Cotton Procurement Meeting 40

Shandong

Briefs
Huanghe River Diversion 41
Vegetable Harvest 41

Sichuan

Briefs
Yongchuan Prefecture Grain Production 42

Xinjiang

Briefs
Winter Wheat Sowing 43
Bumper Harvest 43
Huocheng County Excess Grain 43

Xizang

Herdsmen Overcome 'Extraordinary' Snowfall
(Liu Yinsheng, Xie Bangmin; XINHUA, 1 Dec 81)..... 44

Briefs
Forest Ownership Certificates 45

Yunnan

Briefs
Dali Bai Autonomous Prefecture Production 46

Zhejiang

Briefs
Lishui Prefecture Agricultural Development 47

ABSTRACTS

AGRICULTURE RESEARCH

HUBEI NONGYE KEXUE /HUBEI AGRICULTURAL SCIENCES/, No 10, Oct 81..... 48

FORESTRY

NANJING LINCHAN GONGYE XUEYUAN XUEBAO /JOURNAL OF NANJING TECHNOLOGICAL COLLEGE OF FOREST PRODUCTS/, No 3, Sep 81..... 51

I. GENERAL INFORMATION

STATE FARM FORESTRY CONFERENCE CONCERNS AIRED

Beijing ZHONGGUO NONGKEN [STATE FARMS AND LAND RECLAMATION IN CHINA] in Chinese No 9, 24 Sep 81 p 21

[Article by Lin Chu [2651 0443]: "Carry Out Readjustment Program To Hasten Forestry Development; North China Region State Agriculture and Livestock Farm Forestry Building Conference for the Exchange of Experiences Convenes in Heilongjiang Province"]

[Text] The North China Region State Agriculture and Livestock Farm Forestry Building Conference for the Exchange of Experiences was held from 21 to 28 July at the Jiusan State Farm Management Bureau in Heilongjiang Province. During the conference, delegates studied anew pertinent Central Committee documents, linking them to realities, and exchanged experiences in the building of forestry. They unanimously affirmed the achievements won in state agriculture and livestock farm forestry building. Forestlands owned by state agriculture and livestock farms in 13 provinces, municipalities, and regions of North China, the Northeast, and the Northwest alone amounted to 15,736,000 mu as of 1980. Of this total, 1,162,000 mu were shelter forest; 897,300 mu were timber forest, and 91,300 mu were economic forest. The remaining 12,833,600 mu consisted of scattered plantings of 99,215,300 trees. During the past several years, especially since the 3d Plenary Session of the 11th Party Central Committee, agriculture and livestock state farm implementation of the program of readjustment has strengthened the building of forestry, and the forested area has increased rapidly. In the 13 reclamation areas of North China, 1.59 million mu was afforested in the 4-year period, 1977-1980, 1.31 times the 1.21 million mu afforested area maintained in the 25 years preceding 1976. The steady increase in the forested area has improved the ecological situation in some units, and has promoted the development of agriculture. In units where the building of forestry got underway fairly early and where the area is fairly large, a certain amount of lumber and firewood has been obtained, and these units have also provided the country with a substantial amount of such diverse forest byproducts as fruits, medicinal materials, wood fungus, and mushrooms.

In the course of the conference, delegates zestfully visited the forest networks at three state farms of Keshan, Jianshan, and Daxijiang.

At the conclusion of the conference, comrades in charge at the Production Bureau of the Ministry of State Farms and Land Reclamation gave talks in which they

expressed the hope that all jurisdictions would give attention to the following five tasks: Fist is the conscientious study of the three important documents of the CCP Central Committee and the State Council pertaining to the protection of forests and development of forestry, and the notice on active development of rural economic diversification, giving serious attention to plans of vital and lasting importance for the prosperity of succeeding generations. Second is intensification of natural resource surveys and the practice of forestry planning. The "65" forestry plan emphasis is on the building of farmland shelter forests, and secondarily on the adaptation of general methods to local situations to build firewood forests, timber forests, economic forests, and afforestation of the four besides [beside roads, streams, villages, and houses] in an organic combination of forest types. Concurrent with attention to afforestation and the operation of forests is the active development of comprehensive use of principal products and byproducts of forestry. Before 1985, the provinces of Liaoning, Jilin, Heilongjiang, Shanxi, Hebei, and Shaanxi should substantially have put into effect forest networks and planting of trees in residential areas. Despite the poor natural conditions in the western part of the three northeastern provinces, in northern Shaanxi, northern Shanxi, Nei Monggol, Xinjiang, Gansu, Qinghai, and Ningxia, forest networks and residential plantings should also be completed as soon as possible. Third is management of forestry through economic methods, promotion of a system of responsibility linking production to remuneration, and the building and perfection of a body of rules and regulations. Fourth is enhancement of scientific experimentation and promotion of advanced techniques to improve the quality of afforestation, to practice care and protection, and to steadily expand benefits from the building of forestry. Fifth is strengthening of leadership, and diligent implementation of the policy of "ownership to the afforester" in forest ownership. So long as the welfare of the state, the collective and individuals is taken into consideration, all measures that arouse the initiative of state farms, the collective, and individuals for afforestation may be adopted. In the execution of policies and the formulation of ordinances, state agriculture and livestock farms should take a leading role. They should unservingly carry out regulations for centralized and unified management of lumber, and firmly halt incidents of reckless timbering and denudation.

9432
CSO: 4007/73

STATE FARMS TAKE STEPS TO TURN LOSSES INTO PROFITS

Xinjiang State Farms

Beijing ZHONGGUO NONGKEN [STATE FARMS AND LAND RECLAMATION IN CHINA] in Chinese No 9, 24 Sep 81 pp 10-11

[Article by Mao Naishun [3029 0035 5293], deputy director, Xinjiang State Farm and Land Reclamation General Bureau]

[Text] Acting in the spirit of emancipation of thought, liberalization of policies, and enlivening of the economy, and implementing a series of policies including the assumption of responsibility for fiscal matters and expansion of the self-determination of enterprises put forward by the CCP Central Committee, Xinjiang state farm and land reclamation enterprises zeroed in on the issue of making up losses that have gone on for the last 10 years or more, carried out inquiries and reform and implemented a method of "making up losses through work."

Why did the Xinjiang State Farm and Land Reclamation General Bureau find it necessary to practice "making up losses through work?" This was because ever since 1967 when losses were incurred and despite large amounts of investment by the state to make up losses year after year, the losses persist. In the 3 years since the smashing of the "gang of four," though production has picked up, the loss situation continues to loom large. Two-thirds of the 168 agricultural and livestock farms and regiments in the state farm and land reclamation system show losses with losses in 1979 amounting to 108 million yuan.

Numerous reasons such as an irrational economic structure, poor administration and management account for the serious enduring losses of the state farm and land reclamation enterprises in Xinjiang Province. One major reason is that the growth of the workforce has far outstripped needs for the development of production with large numbers of excess workers greatly swelling the wage rolls. In the 11 year period, 1966-1977, the scale of farming and livestock production in the Xinjiang state farm and land reclamation enterprises has pretty much remained the same. The cultivated land area increased from 12,128,000 mu to 12,671,000, an increase of only 4.5 percent, while the labor force has increased from 547,000 to 731,000, an increase of 33.1 percent. Total wages for staff and workers increased from 254,440,000 yuan to 420,120,000 yuan, an increase of 65.1 percent. Regiments and farms have a surplus of 300,000 people, which annually cost a total of 200 million yuan in wages. This is a major reason losses are incurred.

Still another major reason for the enduring losses in Xinjiang state farm and land reclamation enterprises is the many years of neglect in repairing farmland water conservancy caused by destruction during the "10 years of catastrophe," which has brought about low and inconsistent farm output. The Xinjiang State Farm and Reclamation Area is an inland arid area where no water conservancy would mean no agriculture. For many years, the state farm and land reclamation system has built a series of water conservancy projects to divert water for irrigation. However, inasmuch as the irrigation ditches are long and a lot of seepage occurs, the water utilization rate averages only 50 percent. Moreover, seasonal water shortages are severe, and annually about 600 million cubic meters that are needed are not available, resulting in large areas of crops being decimated by drought. Between 1977 and 1979, the drought-stricken area annually amounted to an average 10.6 percent of the total area sown with the area decimated by drought amounting to 2.9 percent.

Unless the water problem is solved, even a higher degree of mechanization, greater amounts of chemical fertilizer, and better scientific farming will not bring good economic benefits. Furthermore, a system of responsibility for production is hard to implement; the enthusiasm of the masses for production cannot be aroused. Thus, the solution to the water problem has become the principal contradiction in the development of production.

So it is that two acute problems confront us. The first is a large amount of surplus labor lacking an outlet and occasioning the annual increase in payments of large amount of wages that increases losses. While we annually get more than 100 million yuan from the national treasury to make up these losses, we are only passively filling in the losses without making the most, in an active sense, of the funds used to make up these losses. Second is the many years of neglect in repairing water conservancy projects, and our not yet having effectively organized forces to effect overall repairs. It was in light of these aforestated problems that we put forward the method of "making up losses through work." The object was to organize the excess workforces, and, without increasing the investment by the state, to use the funds provided by the state to make up the losses, by making supplemental fund disbursements on the basis of how much labor was put into the capital construction of farmland water conservancy and the amount of work completed. This would change the conditions of production by putting into effect intensive farming which would form a good foundation for hastening the development of agricultural production, and bringing about an early turn around of losses to profits.

The specific ways in which we put into effect "making up losses through work" were as follows.

First, from the general bureau down to the state farm and land reclamation bureaus in each locale, "making up of losses through work" was made a major matter in reform of the state farm and land reclamation administration and management. Leaders divided up the work making specific persons responsible for it. Specialized management organizations to which planning, financial, capital construction, and material departments belonged were established.

Second, in the organization of workforces, each farming and livestock regiment and farm comprehensively put into effect the methods of "fixed contract rewards" and assigning responsibility for fiscal matters, and following the principle of making arrangements for both construction for present production and for long range construction. Fixed numbers of people and fixed sums of money were strictly allocated. So long as they guaranteed labor for building farmland water conservancy projects, the excess labor force could also be used to develop industrial sideline production and be organized into specialized teams for work inside their units or contracted for projects outside of them.

Third, in order to use manpower, materials, and finances flexibly and well, and to use a relatively small amount of investment funds to obtain fairly large economic benefits, we placed under unified planning and consolidated use all the funds that the state had allocated for capital construction of water conservancy, for making up losses, and for minor water expenditures [xiao feishui 1420 6316 3055]. Projects involving "making up losses according to labor" were, for the most part, labor intensive projects; wages for this came out of funds intended to make-up losses. Project materials and equipment costs came out of minor water expenditures. All consolidated funds used were disbursed project by project and according to progress shown, in implementation of the principle of "the more done the more given, the less done the less given, and nothing done nothing given."

Fourth, all the capital construction done by "making up losses through work" used capital construction management methods, with echelon by echelon management. Company size projects reported to regiments and farms for checking and verification, and regiment and farm projects reported to the state farm and land reclamation bureaus for checking and verification. Especially large projects that straddled regiments and farms reported to the General Bureau for approval. In addition, individual projects funded for more than 500,000 yuan reported to the General Bureau for checking and approval. Projects funded for less than 500,000 yuan were checked and approved by the state farm and land reclamation bureaus, with reporting for the record to the General Bureau as well. In order to assure construction progress and project quality, all projects that had been approved were assured necessary funds, materials, equipment, and transportation.

More than 1 year's experience has shown that "making up losses through work" not only put to purposeful use nearly 50,000 surplus workers, but also effected preliminary improvements in production conditions, and effectively advanced development of production.

In 1980, in a situation in which state investment in water conservancy and in water expenditures declined 35 percent from the 1979 figures, and the quantity of work completed increased 58 percent over the preceding year. A total of 1,033 kilometers of irrigation ditches were repaired to prevent leaks; 477 wells were sunk; 117 old wells were equipped; 5 small reservoirs, and nearly 800 kilometers of irrigation and drainage ditches were renovated. As a result of the work done on these projects, the volume of water increased by 200 million cubic meters, and irrigation on more than 60 square kilometers was improved to win remarkable results in economic benefits. Take the case of the gross output

value of agriculture as an example. In 1980, it increased to 630 million yuan from the 554 million yuan of the previous year, an increase of 12.8 percent. Despite a 232,600 mu reduction from the previous year in the area sown, grain output exceeded that of the previous year, and cotton output rose to 695,700 dan from the 409,000 dan of the previous year, a 69.9 percent increase. Oil bearing crops increased from the previous year's 625,000 dan to 809,900 dan, a 29.5 percent increase. Sugarbeet output rose from the 234,000 tons of the previous year to 300,000 tons, an increase of 28.1 percent. While expenditures of public funds increased by 130 million yuan, losses declined from the previous year's 108 million yuan to 43.58 million yuan. The number of profitable farms rose from the 7 of 1977 to 51, and total profits rose from 2.36 million yuan to 43.27 million yuan. From the looks of the current production situation, state farm and land reclamation enterprises throughout the region will make the turn around from losses to profits in 1981. Numerous reasons account for these achievements, but a major reason has been the institution of "making up losses through work," which improved production conditions.

In the Guidun State Farm and Land Reclamation Bureau, where fairly good attention was given to "making up losses through work," the economic benefits have been even more striking. In 1980, they took 5.05 million yuan of "making up losses through work" funds, and 2,535,000 yuan for small water [project] expenditures, as well as 3.96 million of state-budgeted water conservancy investment funds, which were combined for use, and 8,000 people were then put to work on farmland water conservancy construction. In the course of a year, the following were completed: 2.93 million cubic meters of earth and stone moved and 9,878 cubic meters of mixed concrete poured on civil projects; 146 kilometers of plastic sheet leak-resistant ditches layed to increase by 9,000 cubic meters the volume of water diverted, and increase by 8.7 million cubic meters the amount in storage; reclamation of more than 30,000 mu of abandoned farmland. As a result of effectively improving production conditions, grain yields increased 40 jin per mu over the previous year, and cotton yields increased by 28 jin per mu. The area planted to wheat increased from the 210,000 mu of the previous year to 260,000 mu, and the area sown to cotton rose from 140,000 mu to 250,000 mu. As a result of the increase in production levels, a tremendous decrease occurred in losses in a rapid conversion of losses to profits. In 1979, losses fell from 23.38 million of the previous year to 15.60 million, and 1980 turned a profit of 156,000 yuan. In other regiments and farms too, a large number of representative examples also appeared of "making up losses through work," to change the production picture and rapidly convert losses into profits.

Experience has shown "making up profits through work" to be a good road for arousing the enthusiasm of enterprises and of staff and workers, for improving the conditions of production, and for increasing economic benefits. During this present period of national readjustment, in particular, development of production depends not principally on expansion of capital construction, but rather on making the most of the role of existing enterpries on changing from extension to intension, and from extensive farming to intensive farming. "Making up losses through labor" fits in just fine with the requirements of this program.

Fujian State Farms

Beijing ZHONGGUO NONGKEN [STATE FARMS AND LAND RECLAMATION IN CHINA] in Chinese No 9, 24 Sep 81 pp 12-13

[Article by Lei Yuxin [7191 1342 2540]]

[Text] Since the implementation by Fujian's state farm and land reclamation enterprises of the programs and policies of the 3d Plenary Session of the 11th Party Central Committee, results from enterprise operations have undergone major changes. In 1979, state farms throughout the province removed the stigma of 22 consecutive years of losses, making profits of 560,000 yuan. Last year various forms of production on farms throughout the province reached all-time highs with profits of 5.84 million yuan, a 9.4 fold increase in profits over the previous year. Profit making farms increased to 86 from the 68 of the previous year. This amounts to 67.2 percent of all farms.

The growth situation for state farm and land reclamation enterprises in Fujian Province is very encouraging; however, development has been very uneven, and a great gap in the fruits of farming exists from one farm to another. In profitable farms, profit levels are fairly high, but in unprofitable farms, losses remain extremely heavy. This shows that a tremendous potential exists for increasing economic benefits. Why has such a situation occurred? It is because of the long term influence of "leftist" ideology on state farm and land reclamation enterprises when things were done without regard for economic laws or natural laws. In the wake of the 3d Plenary Session of the 11th Party Central Committee, some state farms took the correct road of running farms like enterprises, and very soon changes took place; other state farms were very slow in recovering from the chaos and thus changes there were not great. The gap in farming achievements between one state farm and another is reflected conspicuously in production costs. To take the cost of several major products as an example, differences between one state farm and another were as follows: Highest cost per dan of paddy was 48.29 yuan; lowest was only 8.47 yuan. Highest cost per dan of tea was 385.54 yuan; lowest was only 68 yuan. Highest cost per dan of live hogs was 289.79 yuan; lowest was 57 yuan. The difference between highest and lowest cost of these goods was more than fourfold. Comparison of these figures raise for us an important problem requiring study, namely, why is there such a gap in production costs on Fujian farms?

In the course of survey, we discovered the following several problems:

First: The problem of how properly to put into effect a program of one dominant industry with diversified operations. Natural conditions on Fujian state farms are good and resources are abundant, but numerous farms have not paid attention to making the most of these advantages, losing economic benefits as a result. For example, the Tianma Citrus State Farm located in the hills has good conditions for growing citrus crops. However, in order to achieve grain self-sufficiency and solve the problem of getting meat to eat, they have used the land that is suited to the growing of citrus for the growing of grain and the raising of hogs. As a result, costs per dan of paddy are 14.1 yuan, and costs per dan of live pork are 153 yuan. Serious losses result in both cases. In another example, the Taicheng State Farm produces loquats for the most part; yet it cleared the hills to grow tea at a very great investment. Cost of producing a dan of tea is 370 yuan, and this also occasions very great losses.

Some Fujian state farms have made proper use of favorable conditions to develop production and win fine results. One example is the Fuqian State Farm. They have made rather good use of hills, water, forests and fields, carrying out a comprehensive development of farming, forestry, livestock raising, and sideline occupations in accordance with actual conditions at the farm. Ever since 1978 production has steadily climbed and product costs have constantly dropped; profits have increased year after year and the livelihood of staff and workers has constantly improved.

Comparisons show that for proper implementation of a program of one principle industry with diversified operations, it is necessary to stick to realities in starting out, do overall planning, use for farming what should be used for farming, for livestock raising what should be used for livestock raising, and for forestry what should be used for forestry in order to have a comprehensive development of agriculture, forestry, livestock raising, and sideline occupations, using a minimum of investment to win maximum economic benefits.

Second: The problem of how to find productive outlets for surplus labor. State farm and land reclamation enterprises in Fujian Province have 160,000 mu of cultivated land, and staff and workers numbering 71,000 people. There is an average 2.4 mu of cultivated land per worker, and costs of manpower amount to about half of the production costs. For the province's state farm and land reclamation enterprises as a whole, the labor productivity rate is 1,400 yuan, but it is only 420 yuan in low farms. On profitable farms where costs are low, the excess labor force nas been made an issue. After Wan'an State Farm instituted a system of responsibility for production, a surplus workforce of more than 120 was organized according to their skills to work in diverse handicrafts and trades making metal fittings [nails, wires, bolts, hinges, locks, etc], processing rice-flour noodles, running small shops, tailoring, and barbering, and in this diverse work different forms of ownership were practiced. This both increased individual income and was a convenience for the masses, and saved 60,000 yuan in wages for the farm in a single year, while bringing in a profit of 10,000 yuan.

The Wan'an State Farm experience shows that in order to lower state farm production costs, it is necessary, first of all, to emancipate thinking, to get rid of the disturbance of "leftist" ideology, and to strive to explore the measures most beneficial for development of productivity and most favorable for increasing the work initiative and the standard of living of the people. It is necessary, second of all, to deal properly with the relationship among the state, the collective and the individual in distributions, using material and distributions to promote both enterprise and staff and worker concern for costs, and caring about cutting costs. Third is the need for equitable use of existing manpower, materials, and financial resources in order to get fairly large economic benefits from fairly small expenditures of labor.

Third: The problem of how to increase per unit yields. The effect of low per unit yields on production costs is very great. In 1980, Fujian's state farm grain yields averaged 1,087 jin per mu, but half the state farms had yields lower than this. Some state farms had paddy yields of 2,260 jin per mu, but state farms with the lowest yields had only 400 jin. Given the same investment

and the same production costs, when per unit yields vary greatly, there is great disparity in the cost of goods. Jiangyang State Farm's tea yields are only 69.5 jin per mu as a result of which the cost per dan is 161 yuan, while the Shaowu Integrated State Farm's tea yields are 170 jin per mu, so costs per dan drop to 77.27 yuan. In the case of paddy rice, the Pingqi Agriculture, Forestry, Land Reclamation and Hatching State Farm's costs per dan of paddy are 21.59 yuan, the result of yields of only 400 jin per mu. The Xibin State Farm in Jinjiang County is located along the seacoast where soil salinity and alkalinity is very strong, yet their paddy rice is produced at a cost of only 9.30 yuan per dan, yields averaging 1,833 jin per mu.

The reason for Xibin State Farm's high per unit yields and low costs is the practice of scientific farming. First of all, was the increase of the soil utilization rate. Second was breeding of superior varieties to increase the single plant reproduction rate. Third was strengthening of fixed quota management to increase the labor productivity rate. The methods used by Xibin State Farm have general significance for all grain production. Only by earnestly taking these three tasks in hand can increase in yields per unit of area be fully realized.

Fourth: The problem of cost management. At this year's Fujian Provincial State Farm Work Conference, everyone acknowledged in the course of discussions that in economic work, the principal manifestation of the "leftist" ideology in state farms was the unrealistic pursuit of high quotas and bigness without concern for consumption and without calculating costs and blindly investing while cost management work was weak.

In order to strengthen cost management work, it is necessary, first of all, to eradicate the effects of "leftist" ideology, and advocate the seeking of truth in facts, a solid workstyle and strengthening of the planning function. It is necessary to build and perfect a series of management systems, particularly systems of responsibility for production and systems of responsibility for the management of costs by farm managers and technical cadres and make cost management permeate enterprise production processes and production links so that every department and every staff member and worker on state farms will be concerned about costs and take responsibility for lowering costs.

Recently a comrade in a leading organ of the Fujian provincial state farm and land reclamation [system] made some careful calculations as follows: Looked at in terms of product cost, when average cost per dan of paddy was 12.22 yuan, 78 farms were above the average. At an average cost per dan of 170.16 for tea production, 39 farms were above the average. At an average cost per dan of 96.40 yuan for live hogs, 72 farms were above the average. If high cost farms were to bring costs down to the average level, and low cost farms were to further lower costs, state farm profits throughout the province could increase several times over. Grain, tea, and hogs are the main products produced on the state farms. If average cost per dan of grain could be lowered to 11 yuan, income would increase 1.2 million yuan. If average costs per dan of tea were to be lowered to 160 yuan, an income increase of 500,000 yuan would be possible. If average cost per dan of live hog were reduced to 70 yuan, an increase in income of 2.6 million yuan would be possible. From these three items alone, the increased income would amount to 4.3 million yuan.

This accounting by Fujian state farm and land reclamation units was good. It was good in that it recognized the importance of reducing costs; it was good in that it strengthened consciousness of cost management; and it was good in that those who did it had a clear accounting in their brains. Were all jurisdictions and all levels of state farm and land reclamation units in the country to make such a conscientious accounting and do some thinking, cost management work in the state farm and land reclamation system would greatly decline, thereby making a greater contribution to the country!

9432
CSO: 4007/73

EXPORT OF ANIMAL BYPRODUCTS INCREASED

OW281514 Beijing XINHUA in English 1507 GMT 28 Nov 81

[Text] Beijing, November 28 (XINHUA)--China's export of many animal by-products including bristle, casing, honey and rabbit hair and meat tops the list in the world during the country's economic readjustment, said Cai Ziwei, vice-minister of agriculture in a recent interview.

Sharp increases in animal products between now and 1985 have been planned at a national conference on agriculture held last month, the vice-minister disclosed.

He noted that China produced 12.05 million tons of pork, beef and mutton last year, a four percent increase over 1978 and still fell far short of demand.

The government, he said, is systematically putting greater stress on animal husbandry. The total output value of animal husbandry climbed from the 13.1 percent of agricultural output in 1978 to 14.2 percent in 1980. But the percentage is to be further raised, with emphasis on fodder-feeding livestock, he said.

This plan is possible because with the new agricultural responsibility system, there is a surplus of manpower in the rural areas and there are 220 million hectares of grassland, 66 million hectares of hilly slopes suitable for grazing.

It was also decided that the suburbs of big and medium cities will make the production of milk, poultry, eggs and meat their major work. What's more, he said, efforts will be made to improve the breed and develop the breeding of valuable animals such as beaver, mink and musk deer.

The development of animal husbandry will improve the quality of people's diet and will bring more income to the peasants, he added.

CSO: 4020/40

BRIEFS

CHANGJIANG RIVER SOIL PRESERVATION--Shanghai, 23 Nov (XINHUA)--At a recent national ecology conference, 92 ecologists presented a six-point suggestion for improving the environment along the Changjiang River, which includes the establishment of a special office in charge of the work, soil and water conservation, afforestation, maintenance of dams, effective control of water pollution and scientific research and survey of the ecology along the river. At present 500 million dun of silt are washed down from the river to the ocean, causing soil erosion in 360,000 square km, about 20 percent of the area in the river basin. [Beijing XINHUA Domestic Service in Chinese 0143 GMT 23 Nov 81 OW]

CSO: 4007/112

BRIEFS

HUAIYUAN GRAIN PRODUCTION--Huaiyuan County in Anhui promotes diversified economy while increasing grain production at the same time. As a result, the total income from diversified economy this year is 110 million yuan, an increase of 50 percent over that of last year. Grain output in 1981 is 320 million jin more than that in 1980. The county is expected to deliver 350 million jin marketable grain to the state. [OW0213325 Hefei Anhui Provinciai Service in Mandarin 1100 GMT 30 Nov 81]

CSO: 4007/114

STUDY ON SOLAR ENERGY DISTRIBUTION, HIGH RICE YIELD REPORTED

Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 4, 10 Aug 81 pp 13-16

[Article by Cai Jinlu [5591 6855 4389] of the Fujian Provincial Meteorological Science Research Institute: "Distribution of Solar Energy and High Yields of Paddy Rice in Fujian"]

[Text] Between 90 and 95 percent of the biological products of paddy rice come from photosynthesis by the green tissues which convert solar energy into chemical energy. Therefore, the yield is determined by the rate of utilization of solar energy. To explore the question of the production and development of paddy rice and to analyze the characteristics of distribution of solar energy throughout the province are very important.

I. Characteristics of Distribution of Total Solar Radiation

Total solar radiation is derived by calculation via the establishment of empirical formulas. At present, the formula $Q = Q_o (a+b \cdot s)$ is generally used to calculate it. In the formula, Q is the total value of radiation of each month sought. Q_o is the total radiation in the ideal atmosphere at each altitude, latitude and in each month. S is the percentage of sunshine of each month, a, b are coefficients. According to research by Wang Binzhong [3769 3521 1813] et al, it is believed that because Q_o is the total radiation of the month in an ideal atmosphere at a certain altitude obtained from the annual average atmospheric pressure at the station to be calculated, the use of this formula can give the values of distribution of total radiation at different latitudes and altitudes, and computation is easy and reliable. We used actually measured data of solar radiation and the percentage of sunshine of each month in Fuzhou from 1960 to 1974 to solve for a and b, and then we calculated the total amount of solar radiation for each month and the cumulative value for the whole year at the 73 meteorological stations (posts) throughout the province according to the above formula. After checking the computations of the actually measured data at the Fuzhou and Longyan Stations, we found that the results and the actually measured values were very close. The greatest error for individual years was below 5 percent. The total amount of solar radiation at each locality was between 100 and 132 kilocalories/centimeter^2, and compared to the 133 kilocalories/centimeter^2 at Taizhong, the 116 kilocalories/centimeter^2 at Guangzhou and the 112 kilocalories/centimeter^2 at Hangzhou in neighboring provinces, the source of radiation in our province is relatively rich (See Diagram 1 and Table 1 for details). The time and space distribution is generally characterized by the following three characteristics:

(1) There is more radiation in the southeastern coastal regions than in the northwestern mountain regions. Because the altitude angle of the sun over the southern regions is larger and the weather is mostly clear, transparency of the atmosphere is better, the total amount of solar radiation received on the ground surface is more than that in the north. For example, the total annual radiation in Shaoan and Xiamen is over 125 kilocalories/centimeter^2 while that at Jianyang and Shaowu is below 105 kilocalories/centimeter^2. Basically, it drops as the latitude increases.

(2) The amount of radiation in regions at a lower altitude above sea level is greater than in regions at a higher altitude above sea level. Our province's mountain range system extends from the northeast to the southwest. It blocks and elevates the moist air from the ocean. In summer, the mountain region is mostly covered by convection clouds and rain. Therefore, the total solar radiation is less in the mountain regions at a higher altitude above sea level than in the plains at a lower altitude above sea level. For example, Yongchun at 188 meters above sea level and 25 degrees north latitude has a total annual solar radiation of 112 kilocalories/centimeter^2 while Jiuxianshan at 1,650 meters above sea level has only 102 kilocalories/centimeter^2. At 27 degrees north latitude, Tuan which is 45 meters above sea level has 108 kilocalories/centimeter^2 while Shouning at 825 meters above sea level only has 102 kilocalories/centimeter^2.

(3) Distribution over time is peak shaped. The distribution of total solar radiation at each locality over time is peak shaped. The highest radiation value is reached in July, the second highest value is reached in August, and then the amount of radiation begins to drop until January and February when it reaches the least value and it begins to rise again in March. This characteristic in distribution is related to the changes in the altitude of the sun and the evolution of atmospheric circulation. The trend of change is consistent with the change in atmospheric temperature and is favorable to agricultural production.

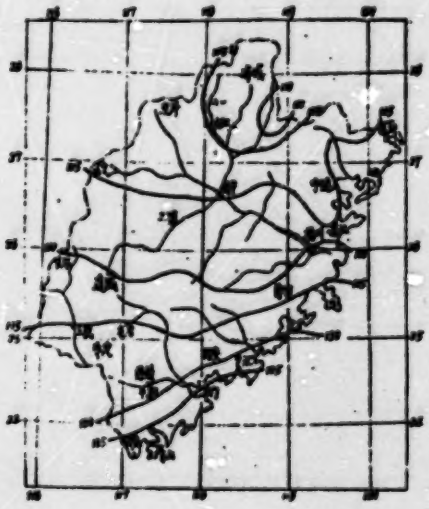

Diagram 1. Distribution of Total Solar Radiation in Fujian

Table 1. Monthly Distribution of Total Solar Radiation at Each Locality in Fujian (Kilocalories/centimeter^2)

表一

(1) 地点	(16) 海拔(米)	(17) 纬度	1月	2月	3月	4月	5月	6月	7月	8月	9月	10月	11月	12月	全年
(2) 东山	56	23°47'	8.4	7.5	9.3	10.2	12.7	11.9	15.7	15.1	12.5	11.7	9.1	8.6	132.7
(3) 厦门	63	24°27'	8.0	7.0	8.6	10.1	11.9	11.2	15.2	14.5	12.2	10.9	8.7	8.2	126.5
(4) 漳州	30	24°30'	7.5	6.4	8.2	9.4	11.2	10.1	13.5	13.4	11.4	10.1	8.4	7.8	117.4
(5) 晋江	21	24°49'	7.6	6.8	8.6	9.9	11.6	10.6	15.3	14.5	12.2	10.6	8.2	7.7	123.6
(6) 龙岩	341	25°06'	7.7	6.3	7.5	9.3	11.0	8.9	13.2	13.1	11.6	10.1	8.4	8.0	115.1
(7) 莆田	10	25°26'	7.3	6.2	8.0	9.3	10.2	9.7	13.9	13.5	11.2	9.4	7.4	7.1	113.2
(8) 福州	88	26°05'	7.0	5.7	7.6	9.1	10.4	9.7	14.4	13.8	10.7	8.7	6.5	6.2	109.8
(9) 三明	167	26°16'	6.4	5.7	7.3	8.9	10.8	9.4	14.1	13.7	10.8	8.9	6.9	6.0	108.8
(10) 宁德	31	26°41'	6.7	5.6	7.3	8.2	9.8	8.8	13.4	13.2	10.2	8.1	6.2	5.5	103.0
(11) 建阳	185	27°20'	5.9	5.2	6.9	8.5	9.6	8.8	13.8	14.1	11.0	9.0	6.6	5.5	104.9
(12) 永春	188	25°20'	7.5	6.3	7.8	9.0	10.4	9.1	13.4	13.1	10.9	9.4	7.9	7.6	112.4
(13) 九仙山	1650	25°43'	7.4	6.9	7.4	8.3	7.3	8.4	12.0	10.5	8.2	9.9	7.8	8.0	102.1
(14) 寿宁	825	27°32'	6.5	6.0	7.7	8.5	8.5	8.5	12.8	12.2	9.6	8.4	6.7	6.5	101.9
(15) 福安	45	27°09'	6.5	5.8	7.8	9.1	9.2	9.6	13.9	13.4	10.7	8.9	6.9	6.3	108.1

Key:

1. Location
2. Dongshan
3. Xiamen
4. Zhangzhou
5. Jinjiang
6. Longyan
7. Putian
8. Fuzhou
9. Sanming
10. Ningde
11. Jianyang
12. Yongchun
13. Jiuxianshan
14. Shouning
15. Fuan
16. Above sea level (meters)
17. Latitude
18. January
19. February
20. March
21. April
22. May
23. June
24. July
25. August
26. September
27. October
28. November
29. December
30. Whole year

II. Physiological Radiation and Productive Potential of Paddy Rice

The part of the radiation absorbed and utilized by photosynthesis in crops is called physiological radiation. Its amount as a proportion of direct radiation and scattered radiation is not the same. According to the computational formula proposed by Moerdawu [5459 1422 6671 3527], calculation of actually measured values of the two parts in Fuzhou shows each month, physiological radiation constitutes 48 to 50 percent of the total amount of radiation. This article used 48 percent in its calculations and a growth period of early rice in the original field from the day the daily average temperature steadily surpasses 15°C in ordinary years to 31 July, a growth period of late rice from 1 August to the last day the daily average temperature steadily surpasses 15°C in ordinary years,

and a growth period of single season rice from 1 June to 30 September to obtain the following formula:

$$\text{Total Physiological Radiation of paddy rice in the original field (Kcal/mu)} = \text{Total Solar Radiation During the Same Period} \times 48\% \ (\text{Kcal/cm}^2) \times 666.7 \times 10^4$$

According to the study by You Xiyu [1429 2448 3768], the coefficient connecting physiological radiation and biological yield is 10 percent. The economic coefficient of paddy rice is taken as 0.5 (actually measured number for si you No 2 and xian you No 6 is 0.49 to 0.61). The formation of each gram of dry substance requires 4.25 kilocalories of heat. Considering the effects of temperature during the panicle bearing and heading period of paddy rice upon the fruiting percentage, we must add a temperature adjustment coefficient (taking 0.8 for double season rice and taking 0.9 for single season rice because the temperature conditions are better during its panicle bearing and heading periods). In this way, we can obtain the potential value of light and temperature, i.e., the highest theoretical yield that is possible:

$$\text{Highest theoretical yield (Potential value of light and temperature in jin/mu)} = \frac{\text{Total physiological radiation during the growth period in the original field (Kcal/mu)} \times 10\% \times 0.5 \times (0.8 - 0.9)}{4.25 \times 500}$$

The ratio between the light energy now accumulated in the economic yield at present and the total physiological radiation is the light energy utilization rate. Its computational formula is:

$$\text{Light Utilization rate (percent)} = \frac{\text{Economic yield (jin)} \times 500 \times 4.25}{\text{Total physiological radiation during the growth period in the original field}} \times 100$$

According to this calculation of the physiological radiation and highest theoretical yield of double season rice and single season rice in the original field during the growth period, the actual yield and the rate of utilization of light energy in 1979, we can see the following: The highest theoretical yield of paddy rice in Fujian is from 2,260 to 2,930 jin for double season early rice, from 1,510 to 2,910 jin for double season late rice, from 3,090 to 3,600 jin for single season rice, 4 to 6 times the average yield of the whole province in 1979. At present, the rate of utilization of light energy throughout the province averages 0.85 percent for double season rice and 0.41 percent for single season rice. The productive potential for paddy rice is extremely great (See Table 2). In recent years, many small area high yielding fields have emerged everywhere. This also shows the possibility of increasing the rate of utilization of light energy by

multiples. For example, in 1979, the experimental field of hybrid rice of Liming Brigade of Longhai County produced a total double season per mu yield of 3,204 jin, the rate of utilization of light energy reached 2.35 percent. The Agricultural Science Institute of Jianyang Prefecture planted an experimental field of hybrid paddy rice. The total double season yield per mu was 2,613 jin. The rate of utilization of light energy reached 2.7 percent. The Guangming Brigade of the Tangchuan Commune in Longxi County at an elevation of 840 meters above sea level planted single season hybrid paddy rice in 1977, per mu yield was 1,355 jin. The agrometeorological experimental station planted double season rice hong 410 in 1978, the total double season per mu yield was 1,412 jin, the rate of utilization of light energy was 1.43 percent and 1.48 percent respectively. A review of domestic and foreign record yields shows the rate of utilization of light energy is generally 2 percent to 2.5 percent, equivalent to about one-half the highest theoretical yield. We must never improperly belittle ourselves.

Table 2. Physiological Radiation, Potential Values of Light and Temperature and Rate of Utilization of Light Energy

表二

(1) 地区	(12) 生理辐射(千卡/亩×10⁶)			(16) 光温潜值(斤/亩)			(17) 1979年产量(斤/亩)			(18) 1979年光能利用率(%)	
	(13)早稻	(14)晚稻	(15)单季稻	(13)早稻	(14)晚稻	(15)单季稻	(13)早稻	(14)晚稻	(15)单季稻	(19)双季稻	(15)单季稻
(2) 全省	120～156	80～155	146～170	2260～2930	1510～2910	3090～3600	564	477	496	0.85	0.41
(3) 厦门	156	155	170	2,930	2,910	3,600	641	610	317	0.86	0.22
(4) 龙溪	146	143	155	2,750	2,690	3,280	616	556	366	0.86	0.27
(5) 晋江	150	149	168	2,900	2,810	3,560	620	520	567	0.81	0.40
(6) 龙岩	138	131	150	2,600	2,460	3,170	556	317	485	0.69	0.38
(7) 莆田	136	135	154	2,570	2,540	3,270	698	606	563	1.02	0.44
(8) 福州	136	124	156	2,560	2,340	3,300	695	661	529	1.11	0.43
(9) 三明	135	116	153	2,550	2,170	3,240	500	435	520	0.79	0.44
(10) 宁德	120	115	146	2,260	2,160	3,090	573	432	500	0.91	0.45
(11) 建阳	125	80	153	2,360	1,510	3,230	446	437	449	0.91	0.46

Key:

1. Region
2. Whole province
3. Xiamen
4. Longxi
5. Jinjiang
6. Longyan
7. Putian
8. Fuzhou
9. Sanming
10. Ningde
11. Jianyang
12. Physiological radiation (kilocalories/mu x 10^6)
13. Early rice
14. Late rice
15. Single season rice
16. Potential value of light and temperature (jin/mu)
17. Yield in 1979 (jin/mu)
18. Rate of utilization of light energy in 1979 (%)
19. Double season rice

Because the potential for increasing the rate of utilization of light energy is still great, in the future, we must avoid blind reclamation and avoid the destruction of ecological balance to expand the area of planting paddy rice. We should seize high yields in the area of cultivated land presently available. Starting out from the actual production of paddy rice in our province, we should first

grasp tightly balanced increases in production. The near term goal is to generally increase the rate of utilization of light energy by double season rice to 1.1 percent above that already reached in the Fuzhou area, increase that of single season rice to 0.6 percent above, then, per mu yield of double season rice can reach 1,350 jin and single season rice can reach above 750 jin. The long term goal should be to catch up with the high yielding fields of each locality and to increase gradually the rate of utilization of light energy to over 2 percent.

III. Main Measures To Increase the Rate of Utilization of Light Energy

Our province is situated in the subtropical zone, light and temperature resources are rich, rainfall is abundant, light, heat and rain occur in the same seasons, and the conditions for the development of paddy rice production are very superior. But, the level of large area production is not high. In 1979, the average per mu yield of double season rice reached only 19.8 percent to 27.5 percent of the highest theoretical yield. That of single season rice reached only 8.8 percent to 16.0 percent. The average per mu yield in Japan has already reached 30 percent to 40 percent of the highest theoretical yield. Now, we will take the data of the agrometeorological experimental base of the Tangchuan Commune of Longxi County from 1977 to 1979 as reference to propose several opinions.

(1) Rational distribution of double season rice and single season rice. For several years, we conducted paddy rice experiments at different altitudes above sea level in Longxi County according to a uniform experimental plan. The experimental results show that in regions at a lower altitude above sea level (Tuanjie, Huanglin), the growth period of paddy rice in the original field is longer (i.e., the time of photosynthesis is longer) and double season rice produces a visible increase in yield over single season rice. In regions at 800 meters above sea level (Tangzhou), the growth period in the original field shortens, double season rice does not produce a big increase over single season rice. In regions at about 1,000 meters above sea level (Daping), the growth period of rice crops is even shorter, double season rice does not produce increased yields, and when cold damage is encountered, "the two season rice performs more poorly than single season rice" (See Table 3). Therefore, in regions at high elevations, since the period of photosynthesis is short, the best sowing and transplanting times should be selected to adjust the key period during which paddy rice forms its yield (heading to maturation) in July and August when the sunshine is strong and the temperature is appropriate to increase the efficiency of photosynthesis and to seize high yields of single season rice. The actual measurements by the Tangzhou agrometeorological experimental station in 1979 showed that during July and August, the average intensity of sunshine of each 10-day period was 93,500 to 45,300 lux which could satisfy the needs for maximum efficiency of photosynthesis of the paddy rice colony, the monthly average temperature was 24.9°C to 23.4°C, exactly the most suitable temperature (20°C to 30°C) for photosynthesis but not reaching the most suitable temperature for respiration (30°C to 40°C), consumption was less, accumulation was plentiful, and high yields could be easily realized. In 1977, we planted an experimental field of single season hybrid rice of 88 mu at the Guangming Brigade at an elevation of 840 meters above sea level. Average per mu yield surpassed 1,000 jin, the secret of high yield was "competing for light." In regions at a lower elevation above sea level, double season rice produces more than single season rice, but we must not exercise "arbitrary uniformity." We should rationally arrange the proportion of double season rice and single season rice

according to the climatic and labor conditions of the locality of that year to strive towards reaching the highest total yield. Seventy-seven percent of the area of cultivated land of Tangzhou Commune are located higher than an elevation of 800 meters above sea level, 22 percent are located between 800 and 500 meters above sea level, only 1 percent is below 500 meters above sea level. Before 1976, double season rice constituted 24 percent, because the seasons were close together, field management could not keep up, thus worsening the degree of cold damage of paddy rice, and loss was serious. In 1977, the area of double season rice was adjusted to 10 percent, and as a result, total yield and unit yield of double season rice and single season rice all surpassed the historical levels. The total yield of food grains of the whole commune increased by more than 2,300,000 jin over 1976.

Table 3. Yields of Rice Fields at Different Elevations Above Sea Level and Rate of Utilization of Light Energy (Longxi County)

(1) 地点	(7) 海拔高度(米)	(8) 年平均气温(℃)	(9) 本田生长期≥15℃至≤15℃(天数)	(10) 产量(斤/亩) 早稻	晚稻	合计	(15) 光能利用率(%) 单季稻	双季稻	单季稻
				(11)	(12)	(13)	(14)	(16)	(17)
(2) 大坪	1050	14.6	165	684	304	988	987	1.20	1.20
(3) 汤川	840	15.7	184	862	270	1132	1021	1.19	1.19
(4) 下村	680	16.2	185	852	340	1193	1068	1.26	1.13
(5) 黄林	570	16.7	187	865	638	1503	1080	1.59	1.15
(6) 团结	126	18.8	214	913	635	1548	992	1.38	0.88

(18) 注，表中产量系由试验小区伸算。大坪仅为1979年产量，其他点均为1978—1979年平均产量。品种，双季稻为红410，单季稻为杂交水稻。

Key:

1. Location
2. Daping
3. Tangchuan
4. Xiacun
5. Huanglin
6. Tuanjie
7. Elevation above sea level (meters)
8. Annual average temperature (°C)
9. Period of growth in the original field $\geq$ 15°C to $\leq$ 15°C (number of days)
10. Yield (jin/mu)
11. Early rice
12. Late rice
13. Total
14. Single season rice
15. Rate of utilization of light energy (%)
16. Double season rice
17. Single season rice
18. Note: Yields in the table were derived from small test areas. The yield of Daping was for 1979 and the others were average yields of 1978-79. Variety: Double season rice was hong 410, single season rice was hybrid paddy rice.

(2) Combination of geng and nuo rice varieties. Many medium and high elevation regions have poor heat conditions, frequently the phenomenon of cold damage of

double season rice "at both ends" occurs. If some geng and nuo rice varieties that have a stronger ability to resist cold can be combined suitably according to the concrete situation of the locality to serve as the "opening variety" of early rice and the "closing variety" of late rice, the period of photosynthesis "at both ends" can be fully utilized. According to observations by the Longxi County meteorological station, comparison of geng rice and xian rice showed a difference of 2°C to 3°C in the ability of cold resistance. For example, during the panicle bearing period and under the same low temperature of 20°C, liming (geng) has 18.5 percent less empty husks than hong 410 (xian). During the panicle bearing period under 20.3°C and during the heading period under a low temperature of 22.2°C, jialing (geng) has 31.9 percent less empty husks than hong 410.

(3) Scientific application of fertilizers and management of water. Utilizing fertilization and irrigation measures to enlarge the leaf surface area of paddy rice as early as possible and maintaining an appropriate leaf surface area coefficient and extending the time of photosynthetic functions are one of the keys to capturing fully the sun's light energy and realizing high yields. The method we used in our bumper harvest fields was: to apply fertilizers early for tillering after the plants have been transplanted and turned green, to apply nitrogen in a key way, to stimulate early growth and fast development so that the leaf surface area coefficient can reach five during the early period of young panicle differentiation. Then, we controlled fertilization and baked the field, and improved the condition of sunlight in the fields. During the period from panicle bearing to the full panicle stage, we sprayed nitrogen, phosphorus, potassium, molybdenum, boron and zengchanling [1073 3934 7227] over the leaves to prevent early withering of leaves, maintain a stronger ability of assimilation by the leaves so that the photosynthetic area during the yellow ripe stage can still remain at 2.5. In this way, per mu yield would all be about 1,200 jin.

(4) Development of winter planted crops. The average temperature of the coldest month of the whole province is 10°C to 12°C in southern Fujian and 5°C to 6°C in northern Fujian. From the time of harvesting late rice to the time of transplanting the 2d year's early rice, the winter fallow period is 110 to 150 days, cumulative temperature reaches 1,500-1,700°C, total solar radiation reaches 29-40 kilocalories/centimeter, and the fallow period of single season rice is even longer. This condition is suitable for planting such chimonophilous crops as broad beans, peas, rape, potato, and such green manure as astragalus. If we calculate the biological products formed by 2 percent of physiological radiation, the per mu yield of rapeseed (with an economic coefficient taken at 0.25) can reach 200 to 300 jin, the weight of fresh grass of astragalus can reach 7,000 to 10,000 jin. This is the most effective utilization of solar energy during low temperature seasons. It not only directly increases agricultural gain, it can also increase soil fertility "to use the fields to nurture the fields" and to promote continued high yields of paddy rice. The 20 mu of experimental fields of the Tangchuan agrometeorological experimental station originally was not highly fertile. Seedlings of rice planted frequently did not grow new leaves or roots after transplanting, and wheat had more difficulty growing. After the autumn harvest in 1977, the fields were prepared and leveled, broad beans, rape and potato were planted. In the winder of the 2d year, astragalus, rape, barley and wheat were planted. As a result, the soil became more and more fertile; the crops grew better and better. In 1979, per mu yield of rapeseed reached 235 jin, that of naked

barley reached 400 jin, per mu yield of single season hybrid paddy rice was above 1,100 jin. After the autumn harvest of 1980, the nutritional content of the soil of the plowing layer was measured. It contained 3.1 percent of organic substances, 52.8 ppm of hydrolyzed nitrogen, 1.8 ppm of immediately effective phosphorus, and 65 ppm of immediately effective potassium. The masses said in praise: "Planting green manure and rapeseed in winter is like a chemical fertilizer plant in the fields, the cost is low and the gain is large, it increases yield and it also increases profits."

9296
CSO: 4007/15

BRIEFS

XIAPU COUNTY AGRICULTURAL PRODUCTION--Xiapu County, Fujian Province, has reaped a bumper agricultural harvest despite serious natural disasters. Its total grain output this year reached 160 million jin, topping last year's by 23 percent. [OW021325 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 29 Nov 81]

CSO: 4007/114

HUIYANG PREFECTURE AIMS FOR ECONOMIC BREAKTHROUGH

HK300657 Guangzhou Guangdong Provincial Service in Mandarin 2330 GMT 29 Nov 81

[Excerpt] Is it possible to achieve a new and comparatively big economic breakthrough in 3 years or so? The Huiyang Prefectural CCP Committee recently held a conference of 800 prefectural, county and commune cadres in Dongguan County, which gave an affirmative reply to this question and decided on practical measures for achieving this new breakthrough.

In order to make a success of this meeting, leading cadres of the prefectural CCP committee carried out more than 2 months of investigation and study in various counties, communes and brigades. On this basis, prefectural CCP committee secretary (Zheng Qun) delivered a report at the meeting on behalf of the committee, entitled "Clearly Understand the Excellent Situation, Enhance Revolutionary Spirit, and Strive for a New and Relatively Great Economic Breakthrough in the Prefecture in 3 years or So." The report analyzed the basis for achieving a new economic breakthrough and put forward the major measures to be undertaken. After full discussion, the 800 cadres attending expressed full agreement with these measures, holding that they were practical and concrete and could be implemented without any increase in state investment. These measures are as follows:

1. Speed up reform of the cultivation system and further readjust the agricultural production structure.

2. Popularize the best strains, so as to increase grain yields and make more land available for switching to industrial crops.

3. Special emphasis must be laid on helping the peasants to manage well their private mountains, and this must be regarded as the main method for greatly increasing people's income in mountain areas in the next 3 years or so.

4. Lay further stress on developing domestic sideline occupations under the new conditions.

5. Launch various kinds of joint economic undertakings in places which practice the system of handing overfull responsibility for task completion. These should be organized on the principle of voluntariness and mutual benefit and in light of local conditions.

6. Industry should closely cooperate to meet the needs of the new breakthrough in agriculture, by developing the processing industries and especially foodstuffs.

CSO: 4007/112

BRIEFS

STATE FARM AFFORESTATION STATISTICS--The Heilongjiang State Farm Administration has 9 state farm management bureaus, and 103 state agricultural and livestock farms subordinate to it. It has a land area of 92,396,000 mu and a cultivated area of 32,565,000 mu. Because of the many years of a lack of appreciation of the importance of forestry production, the artificially afforested area in 1975 was only 510,000 mu; erosion was extremely severe; windstorm, drought, and waterlogging disasters constantly occurred, and agriculture and livestock industry output was very inconsistent. Experience has made us gradually realize that without forestry there can be no stable agriculture; only through major efforts to plant trees for afforestation and the building of a fine ecological environment for agriculture can agricultural production steadily develop. The pace of afforestation has steadily quickened during the past several years, the artificially afforested area increasing by 770,000 mu between 1976 and 1980. This was equal to 1.5 times the artificially afforested area for the previous 25 years. In 1981, 822,385 mu were afforested in fulfillment of 164 percent of plan. [Excerpt] [Beijing ZHONGGUO NONGKEN [STATE FARM AND LAND RECLAMATION IN CHINA] in Chinese No 9, 24 Sep 81 p 22] 9432

CSO: 4007/73

BUMPER SUMMER GRAIN HARVEST FOR STATE FARMS REPORTED

Beijing ZHONGGUO NONGKEN [STATE FARMS AND LAND RECLAMATION IN CHINA] in Chinese No 9, 24 Sep 81 p 34

[Article by Henan Provincial Farm and Land Reclamation Bureau: "Triumph Over the Major Drought Disaster for a Bumper Summer Grain Harvest"]

[Text] Henan Province's 98 state farms have triumphed over this year's especially severe drought to win a heartening bumper summer grain harvest with total output exceeding last year's. Yields from a state farm summer grain area of 223,100 mu averaged 435 jin per mu, a 7 percent increase as compared with last year. Total output was 101.44 million jin, and despite a 2,700 mu cut from last year in the area sown, output totaled 5.7 percent more than last year.

From the 104,000 mu summer grain area on 5 state farms belonging to the province, which accounted for 44.4 percent of the province's state farm sown area, output totaled 53.4 million jin or 52.6 percent of total state farm output for the province for a 3.8 percent increase over last year. Yields averaged 514 jin per mu, a 5.2 percent increase over last year. The Huangfa District State Farm's 58,468 mu of summer grain, which has had consecutive yearly increases in grain output, had a 2.4 percent increase in per unit yields this year. Yields amounted to an average 556 jin per mu for an all-time high.

On the 129,200 mu summer grain area of 12 state farms belonging to prefectures and municipalities, yields averaged 372 jin per mu, a 9.1 percent increase over last year.

To win such a fine summer grain harvest in this year of an especially severe drought was by no means easy. Diligent implementation of the programs and policies that have ensued from the 3d Plenary Session of the 11th Party Central Committee, institution of various kinds of systems of responsibility for production, and diligent scientific farming was largely responsible for the good results.

9432
CSO: 4007/73

BRIEFS

FUNING COUNTY AGRICULTURAL HARVESTS--Funing County in Jiangsu has reaped bumper agricultural harvests this year. The total output of grain has reached 715 million jin, 50 million jin more than the 1979 record figure. The cotton output has increased by 80 percent and of oil-bearing crops doubled over that of last year. [OW021325 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 28 Nov 81]

CSO: 4007/114

MEETING FOCUSES ON RESPONSIBILITY SYSTEMS

SK250848 Changchun Jilin Provincial Service in Mandarin 1100 GMT 24 Nov 81

[Excerpt] According to our sources, comrades participating at the meeting of party members and cadres at and above county level, which was sponsored by the provincial CCP committee from 20 to 24 November, conscientiously studied the guidelines of the national rural work conference and, in line with the realities of our province, emphatically discussed ways to solve questions concerning responsibility systems in agricultural production.

Since the 3d plenary session of the 11th CCP Central Committee and after implementing the documents of the CCP Central Committee on establishing responsibility systems in agricultural production, our province has made great progress in implementing responsibility systems in agricultural production. We have established responsibility systems in many aspects, developed the system of calculating payments in accordance with output and provided various forms of responsibility systems, thus arousing the enthusiasm of peasants and promoting agricultural production in an all-round way.

Comrades participating at the meeting conscientiously analyzed, on the basis of summing up the experiences and lessons of implementing responsibility systems in the past 2 years, the current situation of our province in responsibility systems, unified their thinking and clarified their tasks. They unanimously held: in view of the guidelines of the national rural work conference and the realities of our province, we face an arduous task of doing a good job in implementing responsibility systems in the coming winter-spring period. Readjustment needs to be made. We should work to establish, readjust and upgrade responsibility systems, responsibility systems should be established as soon as possible in units where such systems have not been established. Responsibility systems should be appropriately readjusted in units where the masses feel unhappy about the systems. No matter what form of responsibility systems is adopted, further efforts must be made to conscientiously sum up experiences to make continuous improvements. We should grasp responsibility systems as a central link in developing agriculture and consolidating and expanding the collective economy.

Comrades participating at the meeting enthusiastically discussed the question of how to establish and improve responsibility systems in agriculture. They unanimously held: the key to doing a good job in implementing responsibility systems is to suit measures to local conditions, proceed from realities, recognize the need to develop production and fully respect the autonomy of production teams and the desire of the masses. It is, therefore, necessary to establish different forms of responsibility systems in accordance with the economic levels of different production teams. A production team should be allowed to adopt various responsibility systems.

CSO: 4007/112

BRIEFS

TOBACCO PROCUREMENT--Jilin Province has reaped a bumper harvest of tobacco this year. By the end of October, the province procured 20 million yuan worth of leaf tobacco, an increase of 31.1 percent over the corresponding 1980 period. The province procured 34,600 dan of sun-cured tobacco and 194,000 dan of flue-cured tobacco. [SK280603 Changchun Jilin Provincial Service in Mandarin 1100 GMT 26 Nov 81 SK]

CSO: 4007/112

BRIEFS

SHENYANG GRAIN, VEGETABLE SUBSIDY--According to SHENYANG RIBAO, in accordance with statistics, the state has given Shenyang Municipality 150 million yuan in subsidies to make up for policy deficits in marketing grain, vegetables, meat and eggs. In other words, an average of 58 yuan has been given each person by the state. According to statistics compiled by grain departments, the state has sustained a loss of 0.1 yuan from selling 1 jin of grain and a loss of 0.8 yuan from selling 1 jin of soyabean oil. The deficits from selling grain are 100 million yuan. Based on the actual sales volume in Shenyang, the state has given 34.91 million yuan to compensate for deficits in marketing meat and 2.38 million yuan to make up for deficits in marketing fresh eggs. [Text] [SK010608 Shenyang Liaoning Provincial Service in Mandarin 2200 GMT 30 Nov 81]

AGRICULTURAL-PRODUCT MARKETS--The total business volume of the provincial agricultural-product markets in the first 10 months of 1981 was 677 million yuan, an increase of 41.9 percent over the corresponding 1980 period. The business volume of 12 main food items, including rice, soybeans, cereal oil, beef, mutton, eggs, chickens and vegetables, increased from 25 to 181 percent. [SK170558 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 14 Nov 81 SK]

GRAIN PROCUREMENT--By 16 November, Liaoning Province had procured 3.81 billion jin of grain, an increase of 2.3 billion jin over the corresponding 1980 period. The annual procurement plan of oil-bearing crops has been overfulfilled. In view of the prosperous rural situation, commercial departments are transferring more industrial goods to the countryside. The province has decided to supply an additional 0.5 jin of edible oil and 1 jin of peanuts to urban residents during the new year's and spring festival. [SK222312 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 21 Nov 81 SK]

ANIMAL PRODUCTS--Liaoning Province had overfulfilled the annual animal product procurement plan by 3.5 percent by the end of October. [SK240513 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 23 Nov 81 SK]

CSO: 4007/112

BRIEFS

GRAIN PROCUREMENT--By the end of October, Nei Monggol had procured 495 million jin of grain, an increase of 130 percent over the corresponding 1980 period, and 320 million jin of oil-bearing seeds, an increase of 250 percent over the corresponding 1980 period. [SK060732 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 5 Nov 81 SK]

PRIVATELY OWNED LIVESTOCK--The Nei Monggol Autonomous Regional CCP Committee and people's government have comprehensively implemented the party's policies on agricultural development and relaxed the policy restraints on private-owned livestock following the convocation of the party's third plenary session. As a result, the number of livestock owned by individual commune members has increased rapidly in the past 3 years. According to statistics, the total number of livestock owned by commune members in the region now stands at 16.31 million head, a 48.5 percent increase over the 1980 figure and doubling that of 1979. Of the total number of the region's livestock, 40.5 percent are privately owned. Every commune household in the region owns 5.8 head of livestock on average. The ratio of draft animals to the total number of livestock has increased from 12.9 percent in 1980 to the present 14.9 percent. [SK102308 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 9 Nov 81 SK]

CSO: 4007/112

BRIEFS

BUMPER SUMMER GRAIN HARVEST--In the wake of the continuation of last year's tremendous increases in summer grain production on state farms in Ningxia Province, another heartening harvest has been won again this year. Output from the 130,000 mu of wheat and the 7,000 mu of barley on 14 state farms totaled 59.2 million jin with yields averaging 432 jin per mu. Both total output and per unit yields showed a 13 percent and a 13.7 percent increase respectively over last year's all time highs. The amount of commodity wheat provided to the state increased from last year's 10.99 million jin to 15.28 million jin for an 85 percent fulfillment of the commodity grain plan quotas for the entire year. [Excerpt] [Beijing ZHONGGUO NONGKEN [STATE FARMS AND LAND RECLAMATION IN CHINA] in Chinese No 9, 24 Sep 81 p 34] 9432

MUSLIM FOODSTUFF INDUSTRY--Yinchuan, 17 Nov (XINHUA)--The financial department of the Ningxia Hui Autonomous Region has allocated 4 million yuan this year to develop a Muslim foodstuff industry, according to the department. The Ningxia Government has taken the step in an effort to meet the rising demands of the 1 million minority Muslim Hui people in the region. Four cold stores have already been built and bakeries and confectioneries have bought biscuit machines and microwave ovens. The cold store in Yinchuan, capital of the region, holds 1,800 tons of food. The government has also employed young Hui people in Muslim foodstuff factories and restaurants which have been equipped with vehicles and utensils. The government has also assured the industry's supply of four and edible oils [as printed]. In the first nine months of this year, Muslim bakeries and confectioneries in Yinchuan, where the Hui population is 30,000 produced 2,000 tons of products in 300 varieties. [Text] [OW190929 Beijing XINHUA in English 0745 GMT 17 Nov 81 OW]

AGRICULTURAL OUTPUT--In the wake of the implementation of the party's rural policies and the consolidation of the production responsibility system, the rural situation in Ningxia region has been good. There has been comprehensive development in agriculture, forestry, animal husbandry, sideline production and fishery. Production of grain and other agricultural products was increased over last year. In addition to bumper agricultural harvests, the region has also done well in afforestation. Some 890,000 mu has been afforested and some 100 million trees have been planted along the roads. As far as diversification is concerned, total income of the commune and brigade enterprises was increased by 12 percent each year from 1977 to 1980, and total income from household sideline occupations increased by 21.9 percent. Trade fairs were also busy in the region. The people's income in the rural areas was also raised. The people's average income in the rural areas last year was 152 yuan, an increase of 23 yuan over 1979. Due to a more stable livelihood, the masses have been more enthusiastic in promoting production and have shown more support for the party's principles and policies. [HK250937 Yinchuan Ningxia Regional Service in Mandarin 2300 GMT 17 Nov 81 HK]

CSO: 4007/112

BRIEFS

MADOI COUNTY LIVESTOCK PRODUCTION--Qinghai Province's Madoi County is increasing livestock production by implementing a responsibility system. Per capita income for Tibetan herdsmen from collectives is 475 yuan, up 12 yuan over 1980. This year the county has raised 150,000 young animals. [SK260620 Xining Qinghai Provincial Service in Mandarin 2330 GMT 25 Nov 81 SK]

CSO: 4007/112

METHODS OF IMPROVING SOIL CONDITIONS DESCRIBED

Xian SHANXI RIBAO in Chinese 27, 30 Aug, 3 Sep 81

[Article by Wang Li [3769 4409]: "Soil improvement Cannot Be Abandoned"]

[27 Aug 81 p 2]

[Text] For our province's agricultural production to realize a relatively big breakthrough in the near future, the key is to use policy to mobilize the enthusiasm of the broad masses of farmers. At the same time, we must rely on scientific techniques to increase the per mu yield. Regarding scientific planting, we must work hard and persistently on this key link of improving the soil in order to solve the conflict between the crops and one of the fundamental conditions for their growth--soil--so that the soil will suit the demands of growth of the crops.

In recent years, many localities have gained a unilateral understanding of the nation's economic readjustment and allowing the farmers to rejuvenate themselves. They no longer emphasize changing the fundamental agricultural conditions and they place even less emphasis on improving the soil, and this is a grave mistake. Actually, improving the soil is the business of the farmers themselves; they improve the soil in front of their own houses, and this does not require investment by the state. As to allowing the farmers to rejuvenate themselves, according to my understanding, to demand dogmatically that the work that has to be done tomorrow or the day after tomorrow be done today is to be out of touch with reality. But not to do the work that needs to be done today and can be done is also a mistake. The correct attitude is to adhere to the principle of doing what one can as much as possible; that which should be done must be done, and it must never be abondoned. Some people also have said that, after implementation of the production responsibility systems of linking production to the laborer, contracting production to the families, and contracting work to the families, soil improvement can no longer be carried out. This is not right either. According to the experience of leveling and preparing the soil by the Duanjia Commune in Dali County, if the masses are clearly told the function and method of improving the soil, if the benefits of soil improvement are linked to the benefit of the masses themselves, and if the criteria of quality, time of completion, and reasonable wages are established, especially establishing one contract for a period of several years, and if the lots do not change, the masses

will have long-range plans and they will do a good job of improving the soil of cultivated land they have contracted to work on.

Leveling and preparing the soil serve greatly to preserve moisture, soil and fertilizers. The loss of water and soil in our province is very serious. According to statistics compiled by the provincial bureau of water and soil retention, the province now loses about 43.7 billion cubic meters of water each year, constituting one-third of the annual rainfall in the whole province. Each year, the province loses about 900 million tons of soil containing 250,000 tons of pure nitrogen, 350,000 tons of pure phosphorus, and 4.4 million tons of pure potassium. The plant humus that is lost is even greater. Because of the loss of water and soil and the problems in work over many years, the reduction of organic matter in our province's soil is very serious. In Qishan County, in 1963, the soil contained 1.4 percent organic matter, while, in 1977, this dropped to 0.9 percent. In Wugong County, this also dropped from 1.22 percent in 1958 to 1 percent in 1980. In Qianyang County, at present the area of soil below 20 centimeters with an organic content of 0.8 percent to 1 percent constitutes 30 percent of the total area of cultivated land and the area of soil with an organic content of 0.6 percent to 0.8 percent and 0.4 percent to 0.5 percent constitutes 35 percent of the total area of cultivated land. The organic content of the soil in the northern Shaanxi region is below 0.6 percent. As the masses in northern Shaanxi have said: "The Yellow River flows toward the east, carrying away food grains and oil."

Of course, controlling the loss of water and soil does not mean just leveling and preparing the soil and building horizontal terrace fields and terrace land; it also requires massive afforestation and planing of grass in the broad regions suitable for afforestation and livestock production, or planting methods that retain water and soil. But in the flat land in Guanzhong and the plateau north of the Wei River, in the hilly ravine regions of northern Shaanxi and the gentle slopes of the mountain regions of southern Shaanxi, leveling the land, building horizontal terrace fields and stone ridge terrace fields are important measures of farmland capital construction and preserving water and soil. The experience and lesson in this regard are profound. Sufang Commune of Wugong County used over 200 cubic meters of water per mu every time it irrigated because the land was not flat and because of massive flood irrigation practices after the Jixia Canal began transporting water. A few years later, the underground water level rose, the exposed water surface area reached over 380 mu. It seems that, after leveling cultivated land that is generally level but not absolutely flat, small border irrigation or furrow irrigation and shallow irrigation can be used. This can greatly conserve water and also can achieve the scientific use of water. It also can prevent the soil from becoming hardpan, salinized and alkalized, or from becoming swampy.

Leveling the land is more important in dry land regions than in mountain land that slopes gently. It can fully utilize rainfall so that new rain can evenly filter into the ground, reducing and even avoiding loss by runoff, and preserving soil, preserving water, and preserving fertilizers. Building horizontal terrace fields in the hilly ravine regions of northern Shaanxi can change "three runs" into "three preservations", and the results of increased yields will be

visible. According to typical surveys, the per mu yield can be increased from 40 - 50 jin on slopes to over 100 jin. Building stone ridge terrace fields and terrace land in mountain regions of soil and rock in southern Shaanxi can prevent washing by torrential rain water, preserve water, preserve soil and preserve fertilizers, and increase the yield if the rock laying is done well. We cannot blame the masses of Zhenan County who called these fields "rock ridges, gold rice bowls."

Regardless of whether it is leveling the land or building terrace fields and terrace land, they must all use the effective method of reversal and preserving mature soil. After leveling, it is best to apply sufficient organic fertilizers and phosphorous fertilizers to ensure that the land leveled that year will produce an increased yield that year and to avoid reduced yields for several years because the surface soil becomes immature.

[30 Aug 81 p 2]

[Text] Deep Upturning of the Soil, Improving the Physical and Chemical Functions of the Soil

Leveling land can only change its shape; only deep upturning can improve its physical and chemical functions.

People often say: "The roots must be deep for the leaves to grow prosperously". "The roots must be deep" before "the leaves can be prosperous," the stems thick, the spikes large and the grains full. The advantage of the land after leveling, preparing, and deep upturning combined with sufficient farmhouse manure applied during deep upturning are that the hardpan plow layer can be broken; the active soil layer can be deepended; and there can be an increase in the gramular structure of the soil, the water permeability and aeration of the soil, the ability of the soil to store water, and the propagation and activity of microorganisms, stimulating the decomposition of mineral fertilizers and plant humus from a state in which they cannot be absorbed to a stace in which they can be absorbed by plants.

According to measurements taken by the provincial Agricultural and Forestry Sciences Academy, the same amount of rainfall in a soil layer of 5 cun to 1 chi produces a water content of 19.8 percent in soil upturned 5 cun, and 21.5 percent in soil upturned 1 chi. In the soil layer of 1 chi to 1.5 chi, the water content in soil upturned 1 chi is 28.8 percent, and in soil upturned 1.5 chi is 21.5 percent. Also, according to measurements of the sowing period of what showing the number of aerobic bacteria in each gram of soil, in the 1.5 cun soil layer, there are 954,000 bacteria in the soil upturned 5 cun, and 1.191 million bacteria in the soil upturned 1 chi 5 cun, an increase of 24.8 percent. The number of nitrifying bacteria is most outstending. Soil upturned 1 chi 5 cun contains 4,231 bacteria, an increase of 93.9 percent. This is similar to what Comrade Mao Zedong said: each granular structure of the soil after deep upturning is like a small reservoir, a small fertilizer warehouse; large granules are large reservoirs and large fertilizer warehouses. The soil, after deep upturning, has a broken hardpan plow layer, the moisture and fertilizers are increased, and the root system of the plants develops naturally.

According to measurements made by the Northwest Biology and Soil Research Institute, the amount of roots in a soil layer of 3 chi deeply upturned from 8 cun to 1 chi is 24.5 percent more than the amount in soil upturned 5 cun. Deep upturning also can stimulate the root system to develop downward. Also, according to measurements taken by the provincial Agricultural and Forestry Sciences Academy, during the period of returning green of wheat showing the amount of roots below 6 cun, the amount of roots in soil deeply upturned 1 chi 5 cun is 13.4 percent more than the soil upturned 5 cun. The deeper the roots, the more nutrients and moisture of the deep soil layers can be absorbed, and this is more beneficial to the growth of the stems and leaves aboveground. Also, deep upturning can remove weeds and eradicate insects.

The method of deep upturning of the land can be done manually, by draft animals, by machine, or by a combination of man, animals, and machine. As farm machinery develops, we can gradually realize machine upturning of soil. The depth of upturning can reach 1 chi 5 cun in the Guanzhong region where the soil layer is thicker. The depth can be shallow in the mountain and sandy regions where the soil is thinner, most suitably to the bottommost layer of unseen soil. [BUJIANTU 0008 6015 0960] No matter which method is used to turn the soil, it is most important not to mix up the soil layers, the mature surface soil should still be kept on top; in deep upturning, a sufficient amount of farmhouse manure, phosphorous fertilizers and stalks returned to the soil or compacted green manure should be applied in the bottom layers of immature soil layers so that organic substances will gradually increase as the substances applied in the soil rot, thus increasing the soil's granular structure and causing the immature soil layer to mature and to become fertile.

Combined with deep upturning, we also can apply nitrogen, phosphorus, and potassium in appropriate proportions based on analysis of a general survey of the soil. Where conditions are favorable, we also can apply necessary trace elements, such as zinc and boron. In regions of Keshan disease, we also should apply an appropriate amount of sodium selenite to adapt to the needs of the crops. Generally speaking, soil upturned deeply once retains water permeability and aeration for 3 years. Therefore, each year, during the fallow period, one-third of the land can be upturned and tilled, and this can be rotated for 3 years to complete one deep upturning of the soil. The time for deep upturning, in the experience of such communes as Fuliu Commune in Heyang County, should be the summer fallow period after summer harvest to take advantage of the presence of moisture for deep upturning. The so-called "cup of oil during the first summer upturning of the soil, half-cup of oil during the second summer upturning of the soil, and drops of oil during the third summer upturning of the soil" shows early deep upturning of the soil in summer is better than late upturning. Winter fallow land also should be deeply upturned after autumn harvest to take advantage of the presence of moisture. Early upturning allows more time for the soil to store rain water and for the roots, stems, and leaves of plants to rot; and the soil can mature and become oily during the hot summer and cold winter. The best upturning is after rain, with the presence of moisture helping to avoid burying a foreign base in the soil. After upturning, the soil should be immediately raked and smoothed to preserve moisture until sowing. The soil should be raked and smoothed once after every rainfall to reduce evaporation of moisture

and to facilitate the storing of rain water during summer and autumn for use in winter and spring.

[3 Sep 81 p 2]

[Text] Use and Nurture the Soil, Improve Fertility of the Land

The problem of infertility and weak fertility of the soil has gradually been recognized. At present, many places have already emphasized rational reverse cropping to use and nurture the land and to cultivate land fertility.

The function of alfalfa to fertilize the land is well known. Although the area of alfalfa in our province has not yet returned to the historical record of 2 million mu, it has increased from the 1,721,500 mu in 1978 to 1,863,400 mu in 1980. Some other places have planted rape and corn in alfalfa fields. These are all welcome beginnings.

Peas also are good and well-known reverse crops. In our province's history, they once covered 6.56 million mu. Now, there are only 3.7 million mu. According to typical experiments, if peas are planted deeply and if sufficient phosphorous fertilizers are applied, good varieties will produce increased yields.

Soybeans can fix 13.5 jin of nitrogen in every mu of soil, equivalent to 67.5 jin of ammonium sulphate, half for use by the soybeans and half to nurture the land. The wilted stems and fallen leaves contain 13.5 percent crude protein. Left in the soil, this also is a very good organic fertilizer. The planting area of soybeans throughout the province increased from 3,152,200 mu in 1977 to 3,173,000 mu in 1980. In addition, chick peas, spring vicia sativa, and similar superior varieties of plants are all being studied and popularized.

The effect of fertilization of the fields by rape is being recognized increasingly. According to scientific measurements, rape that produces a per mu yield of 250 jin of rapeseed provides 260 jin of fallen leaves per mu, 600 to 700 jin of stalks, 482 jin of roots, and 200 jin of cuticles. The soil of the rape crop contains 1.09 percent organic substances; the roots, stems, and leaves are equivalent to 4 to 6 jin of pure nitrogen, or 30 jin of standard nitrogen fertilizer. The secretions of the root system can change the soil's mineral phosphorus from a state which cannot be absorbed to a state which can be absorbed. Rape cake of 130 jin that produces a per mu yield of 250 jin of rapeseeds is equivalent to 36 jin of standard nitrogen fertilizer, 24 jin of phosphorous fertilizer, and 4.8 jin of potassium fertilizer. It is true that planting a mu of rape can fertilize 2 mu of food grain fields! The area of rape throughout the province increased from 1.16 million mu in 1977 to 1.3 million mu in 1980. Fufeng County planted 35,000 mu of rape in 1977, and 70,000 mu in 1980; and it became a county with a double bumber harvest of rape and food grains in our province.

In addition, the area of planing of various types of green manure and returning stalks to the fields, and the area interplanted and companion planted with food grain crops, sweet clover, and hairy vetch are all gradually increasing.

At present, our province still has over 12.3 million mu of cultivated land consisting of poor soil. Of this area, over 900,000 mu are saline and alkaline land, over 4.3 million mu are heavy clay commonly called yellow mud, over 1.3 million mu are windy and sandy land, the Qinba mountain region has over 5.8 million mu of pebble land, and there also are cold paddy fields that are submerged under water throughout the year. The masses have devised many methods of reforming these lands. The saline and alkaline land of Xuzhuang Commune in Dali County originally produced over 100 jin per mu. They used the methods of digging trenches to lead water into the region to wash and drain away alkali, paved sand to suppress alkalinity, covered the land with soil to cover the alkali, guided flood water to silt the land, sank mechanized wells to lower the water level, increased the application of organic fertilizers, and planted beets. The per mu yield increased to 400 - 500 jin. Wangling Brigade in Ankang County treated heavy clay (yellow mud) by mixing it with fine sand and planting green manure, increased the application of organic fertilizers, and low yields became high yields. Xiaotanzi Brigade in Dingbian County treated windy and sandy soil by building a forest network tc break the wind and stabilize the sand, and used loess to mix with the sand (gradually mixing to over 3 cun); thus, the per mu yield of 1,000 mu of land reached 400 - 500 jin. Many localities treated the pebble land of Qinba by upturning the soil more for weathering, planting green manure, and returning stalks to the fields to improve the soil. Many localities treated cold paddy fields that were submerged under water throughout the year by draining the water during the resting period between crops to upturn and dry the fields, or planting double cropping dryland rice to increase the ground temperature. The results were outstanding. In general, if we skillfully summarize the experience of the masses and pay attention to popularization, these poor soils can all be reformed without much difficulty.

9296
CSO: 4007/17

BRIEFS

COTTON PROCUREMENT MEETING--On 2 and 3 November, the Shaanxi Provincial Government held an on-the-spot meeting in Dali County on picking and procuring cotton. The meeting demanded that all prefectures, counties and municipalities in the cotton-producing areas concentrate their leadership bodies in spending a certain period of time on the procurement of cotton. The meeting introduced the experiences of Dali County, Qian County, (Dongwang) commune in Heyang County and (Bozhi) commune in Dali County in procuring cotton. By the end of October, Dali County had procured some 101,800 dan of ginned cotton and Qian County had procured some 25,700 dan of ginned cotton, respectively fulfilling 44.2 and 36.6 percent of their quotas. By the end of October, the province had procured some 420,000 dan of ginned cotton, which accounted for 20.9 percent of the annual quota for procurement. The amount of ginned cotton procured in the province in this period was 102,300 dan more than in the corresponding period last year. However, judging from the province's overall situation, the speed of cotton procurement in the province has been slow and the progress has been very uneven. To improve cotton procurement work, the meeting demanded that all places strengthen leadership and step up cotton procurement work. Vice Governor Bai Jinian attended and spoke at the meeting. [HK140710 Xian Shaanxi Provincial Service in Mandarin 1130 GMT 6 Nov 81 HK]

CSO: 4007/112

BRIEFS

HUANGHE RIVER DIVERSION--Owing to the drought this year, the water level of Dongping Lake, Shandong Province, has dropped severely. The Shandong Provincial CCP Committee and the provincial people's government have decided to appropriate 80,000 yuan to divert Huanghe River water to the lake in an effort to protect its aquatic resources and its irrigation capacity for the surrounding wheat fields. From 7 to 17 November, Liangshan County mobilized over 10,000 persons and completed building this water diversion channel, which is 13.9 kilometers long. On 17 November the channel was put into operation to divert water from Huanghe River. [SK281012 Jinan Shandong Provincial Service in Mandarin 2300 GMT 26 Nov 81 SK]

VEGETABLE HARVEST--Shandong Province is expected to procure 1.38 billion jin of marketable vegetables in 1981, an increase of better than 20 percent over 1980. According to statistics released by 10 cities and mining areas, the average per capita daily supply of vegetables is 1 jin and 3 liang, an increase of 1 liang over 1980. [SK110728 Jinan Shandong Provincial Service in Mandarin 2300 GMT 10 Nov 81 SK]

CSO: 4007/112

BRIEFS

YONGCHUAN PREFECTURE GRAIN PRODUCTION--Yongchuan Prefecture which was seriously struck by floods this year reaped an all-round bumper grain harvest. All eight counties throughout the prefecture increased production. The whole prefecture used superior seeds of the main spring-sown and spring-harvested crops. The per mu yield of hybrid rice on 500,000 mu was generally 100 or 200 jin more than that of conventional rice. [HK250927 Chengdu Sichuan Provincial Service in Mandarin 2300 GMT 15 Nov 81 HK]

CSO: 4007/112

BRIEFS

WINTER WHEAT SOWING--By 2 November, Xinjiang region had sown winter wheat on some 11.3 million mu, overfulfilling its quota for sowing winter wheat. The region had sown winter wheat on 15,000 mu more than last year. At present, all places are tending winter wheat well to protect it throughout winter. [HK160735 Urumqi Xinjiang Regional Service in Mandarin 1650 GMT 12 Nov 81 HK]

BUMPER HARVEST--Xinjiang region has reaped bumper harvest of cotton and oil-bearing crops this year. It is estimated that this year total output of cotton will be 2.07 million dan, 31 percent more than last year; per mu yield of ginned cotton will be 61 jin, 5 percent more than last year and the total output of oil-bearing crops will be 3.63 million dan, 3.3 percent more than last year. [HK140710 Urumqi Xinjiang Regional Service in Mandarin 1650 GMT 6 Nov 81 HK]

HUOCHENG COUNTY EXCESS GRAIN--The masses in Huocheng autonomous county have displayed their patriotic spirit by selling excess production of grain and oil-bearing crops, which had been grown in their private plots, to the state. According to incomplete statistics, as of 20 October, the commune members of the county have sold 656,000 jin of wheat and 1.53 million jin of oil-bearing crops to the state. [HK020644 Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 19 Nov 81]

CSO: 4007/114

HERDSMEN OVERCOME 'EXTRAORDINARY' SNOWFALL

OW010513 Beijing XINHUA Domestic Service in Chinese 0133 GMT 1 Dec 81

[By XINHUA correspondents Liu Yinsheng and Xie Bangmin]

[Text] Lhasa, 1 Dec (XINHUA)--Herdsmen in Nagqu Prefecture, Xizang, have made gratifying achievements in animal husbandry this year, after surmounting extraordinary snowfall rarely seen in the past. The total number of livestock registered an increase of 2 percent over last year; major animal products such as sheep's wool, butter and meat also topped last year by 15 to 20 percent. The entire pastoral area is bustling with activity for the first time since democratic reform in Xizang, signifying prosperity and unity.

In their newsgathering assignment in the grasslands of northern Xizang, the correspondents had often seen convoys of trucks laden with sheepswool and hides, columns of yaks carrying butter and salt and herds of cows and sheep hurrying to sales at the state procurement stations or to the rural areas to be traded with peasants. The herdsmen told the correspondents smilingly: We have done well, considering this year's extraordinary natural disaster, thanks to the party Central Committee's directive on work in Xizang and to the production responsibility system.

Nagqu Prefecture is a major livestock breeding base in Xizang. Since the party Central Committee's directive concerning work in Xizang was put into effect last year, the Nagqu Prefectural CCP Committee and the prefectural administrative office have consistently implemented the party's nationalities policy and consolidated and eased various policies in the pastoral areas. As a result, the people in these areas have enjoyed peace of mind and are in high spirits; the political situation is stable and the economy flourishing.

Nagqu Prefecture reported heavy snowfall last winter and spring, lasting 5 or 6 months. Some places reported snow a meter deep. Because of the long duration and extent of the snowfall, it was quite common to see cattle unable to find grass as the grazing grounds were snow covered. With one heart and one mind, the cadres and the masses voluntarily gave up their tents and blankets to warm old, weak and young animals, fed them with their own food grain and tea leaves and shifted the grazing grounds by every method to greatly minimize loss of cattle.

At present, the broad masses of herdsmen in Nagqu Prefecture are actively storing up grass and are selling and trading animal products.

CSO: 4007/112

BRIEFS

FOREST OWNERSHIP CERTIFICATES--In order to further implement the agricultural policies, the Xizang Regional People's Government recently decided to issue forest ownership certificates and issued a circular on this. The circular pointed out: Commune members who plant trees around their houses or in fixed areas allocated by the production teams can permanently own the trees. Forest ownership certificates should be issued to all tree farms. The forest ownership certificates will be printed by the regional forestry bureau and distributed by the respective county people's governments. [OW031005 Lhasa Xizang Regional Service in Mandarin 1130 GMT 6 Nov 81 HK]

CSO: 4007/112

BRIEFS

DALI BAI AUTONOMOUS PREFECTURE PRODUCTION--Dali Bai autonomous prefecture increased production of grain, oil-bearing crops, flue-cured tobacco and sugarcane this year. The autonomous region suffered from serious plant diseases and insect pests earlier this year and spring-harvested crop production dropped by 65 million jin. In order to overcome disaster and increase production, the autonomous prefectural leaders organized work teams to go to the lower levels of the rural areas to implement various economic policies and consolidate and perfect various production responsibility systems. As a result, the total grain production this year is expected to exceed the production record by 1.21 percent, oil-bearing crops production will increase by 93 percent over last year, flue-cured tobacco by 11.8 percent, and sugarcane by 24 percent. [HK020644 Kunming Yunnan Regional Service in Mandarin 1100 GMT 19 Nov 81]

CSO: 4007/114

BRIEFS

LISHUI PREFECTURE AGRICULTURAL DEVELOPMENT--Lishui Prefecture in Zhejiang Province has steadily developed agriculture and forestry. Expects to harvest 1.5 billion jin grain and has afforested 275,000 mu this year. [OW021325 Hangzhou Zhejiang Provincial Service in Mandarin 1040 GMT 29 Nov 81]

CSO: 4007/114

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TITLE: "Preliminary Investigation Into Factors Influencing the Grain Weight of Wheat"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 10, Oct 81 pp 1-4

ABSTRACT: Under the condition of 300 thousand spikes/mu and 35 grains/spike on the average, the increase of every one g of the grain test weight [per 1000 grains] means a yield increase of 21 jin of wheat/mu. The effects of the weather, and cultivation conditions (including planting time, density, and fertilizer application) on the weight of the grains are examined in detail based upon the experimental data of the institute, 1955-76, using current breeds of wheat, such as Nanda-2419, Xiang mo No 4, Yibing No 1, Omo No 6, etc. Results indicate that aside from various natural factors after inflorescence, the weight of grains is also greatly affected by the cultivation and management conditions throughout the growth and development period of the wheat. Accordingly, measures concerning timely planting, reasonable density, lodging prevention, additional fertilizer application, flood and drought prevention, disease and pest prevention and control, and timely harvest and threshing that are favorable for increasing the dry weight of the grains are proposed.

AUTHOR: XUAN Xiuzhi [6513 4423 5347]

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TITLE: "Physiological Characteristics and Cultivation Technique of Paddy Rice of Geothermal Greenhouse"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 10, Oct 81 pp 8-12

ABSTRACT: Since 1971, the author and colleagues have carried out 9 winter-spring seasons of repeated experiments with the use of geothermal greenhouse to cultivate paddy rice. The greenhouse is used to adjust the blooming time of early, intermediate, and late rice breeds freely to expand the range of selection of parents for hybridization. In 1972-76, more than 200 groupings were tried and 3 generations of propagation were successfully carried out in one year. Under the short daylight condition in the winter, the rice breeds have shorter period of growth and development and require less effective accumulation of temperature when they are cultivated in the greenhouse. When spring water containing sodium sulfate is used to water the rice plants in the greenhouse for a prolonged period of time and the soil pH reaches 8-9, the seedlings will be harmed and the only way to overcome the problem is to replace the soil and not to use the spring water. Various other important techniques of greenhouse culture of paddy rice are discussed. There is no mention of the source of the heat energy or the structure of the greenhouse, however.

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TITLE: "Preliminary Research on the Fertility Supplying Capacity of the Soil of Huangnitian and the Effect of Fertilizer Application"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 10, Oct 81 pp 16-18

ABSTRACT: Huangnitu [soil of Huangnitian, a field of yellow mud] is one of the major cultivated soils in Hubei, amounting to 20 percent of cultivated area of the province, i.e. about 12,808 thousand mu. Of these, 4,360 thousand mu are paddies and 8,448 thousand mu are dry fields, amounting to 14.7 and 24.5 percent of the province's paddies and dry fields respectively. The regions of its extensive distribution are also important production bases of grain, cotton, and oil of the province. At present, the yield of Huangnitu is generally not high, with unit yield of only 300-400 jin/mu of rice, or 100-200 jin/mu of wheat, or several tens of jin/mu of ginned cotton. A study, combining small-plot field experiment and laboratory analyses, has been conducted since 1979. The test crops are dual-season rice-green manure. The field experiment is divided into 6 forms: (1) control, with no fertilizer application; (2) basic fertilizer of 2500 jin green manure/mu; (3) basic fertilizer + nitrogen, i.e. (2) + 12 jin/mu of N; (4) basic fertilizer + nitrogen-phosphorus, i.e. (3) + 6 jin of P_2O_5/mu; (5) basic fertilizer + nitrogen-potassium, i.e. (2) + 12 jin of K_2O/mu; (6) basic fertilizer + nitrogen-phosphorus-potassium, i.e. (5) + 6 jin of P_2O_5/mu. Organic matter, pH, nitrogen, phosporus, and potas-

[continuation of HUBEI NONGYE KEXUE No 10, 1981 pp 16-18]

sium contents of Huangnitu specimens are analyzed before the experiment and after the harvest of the experimental crop every season. Rice plants are analyzed to compute the rate of absorption of nitrogen, phosphorus, potassium, and the fertilizer utilization rate. The fertilizer application benefit is further examined by combining the laboratory analysis results and growth condition and the yield of rice in the field. Results indicate that the productivity of Huangnitu is rather low and the yield of rice depends mainly on fertilizer. Utilization of chemical nitrogen is 46.1 percent for early rice and 60.6 percent for late rice. With added phosphorus, the rate is raised to 60.6 percent for early rice but only 61.3 percent for late rice. At present, potassium fertilizer has not demonstrated any yield increase results. Application of green manure appears to be the low cost,and highly beneficial measure for yield increase in Huangnitu. Details of the experiment are reported.

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TITLE: "Diagnosis of Rabies of Domestic Animals in Zhumadian Prefecture of Henan Province"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 10, Oct 81 pp 32-34

ABSTRACT: Since the autumn of 1980, cases of suspected rabies have been continuously discovered among domestic animals in Zhumadian Prefecture. In all cases, treatment produced no effect and the animals died. According to incomplete statistics of several animal hospitals, in Jan-May this year, 16 oxen, 8 sheep, 3 pigs, 1 donkey, 2 mules, and 2 dogs died of the disease in the prefecture. Epidemiological surveys, clinical symptoms, animal experimental inoculations, and laboratory examination of brain tissues all verify the diagnosis of rabies to be correct.

6248
CSO: 4009/113

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TITLE: "A Study on the Pathogen of Blight Disease of Tungoil Trees"

SOURCE: Nanjing NANJING LINCHAN GONGYE XUEYUAN XUEBAO [JOURNAL OF NANJING TECHNOLOGICAL COLLEGE OF FOREST PRODUCTS] in Chinese No 3, Sep 81 pp 45-53

TEXT OF ENGLISH ABSTRACT: The blight disease of tungoil trees is generally called tungoil tree pestilence. It is a vascular disease caused by a new formae speciale of *Fusarium oxysporum*, *Fusarium oxysporum* Schl. *f. sp. aleuritidis f. sp.* Nov. This disease is found in China in Jiangxi, Zhejiang, Hunan and Sichuan, etc., provinces. It usually attacks the three to four year old tungoil trees, or the older ones. The pathogen enters the host plant through its roots, multiplies in its vessels and gradually extends upward to parts of the plant above ground, thus causing the whole or half of the plant to die. The highest infection rate of tungoil trees may reach 60-90 percent. It is a destructive disease and seriously threatens the production of tungoil trees.

Much of the pathogen has been isolated and cultured, inoculated and reisolated. It belongs to *Fusarium oxysporum* according ot its morphological features.

[Continuation of NANJING LINCHAN GONGYE XUEYUAN XUEBAO No 3, Sep 81 pp 45-53]

Host plants of the pathogen include 64 species in 29 families. No other species is attacked. In view of its highly selective pathogenicity to host and the rule for international nomenclature that the name of the formae speciales should correspond to that of the host, the author suggests that the pathogen on tungoil trees be called *Fusarium oxysporum* Schl. *f. sp. aleuritidis f. sp.* Nov.

The spores of the pathogen can germinate normally in clean water with a pH value of 3-12. When the relative humidity is lower than 80 percent, spores fail to germinate. Optimum temperature for germination is 25-30°C. Carbonic and phosphorous nutrient elements are not especially required for the growth of the pathogen, but nitrogen is necessary.

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TITLE: "A Study on the Compression Processing of the CCT Data Gathered by Land Satellites"

SOURCE: Nanjing NANJING LINCHAN GONGYE XUEYUAN XUEBAO [JOURNAL OF NANJING TECHNOLOGICAL COLLEGE OF FOREST PRODUCTS] in Chinese No 3, Sep 81 pp 98-114

TEXT OF ENGLISH ABSTRACT: With the aid of electronic computers, data compression processing is an important technique used for recognizing the pattern of remote sensing images. In this paper, the Karhunen-Loeve transformation and the R-Factor Analysis have been used in compression-processing the multi-spectrum data on the land satellite Computer Compatible Tape (CCT). As a result, with about 99 percent of the information being kept, the characteristic quantities can be compressed from four dimensions into two dimensions, so that a picture with clusters of dots can be made on a sheet of paper for recognizing and defining the objects.

9717
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END

JPRS 79691

21 December 1981

China Report

AGRICULTURE

No. 179

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JPRS 79691

21 December 1981

CHINA REPORT

AGRICULTURE

No. 179

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

On Agricultural Responsiblity Systems
(Wang Songpei, Guo Ming; JINGJI YANJIU, 20 Oct 81)..... 1

Peasant Paper Carries Agricultural Statistics
(CHINA DAILY, 3 Dec 81)..... 15

Provinces Reap Good Harvests in 1981
(XINHUA, 2 Dec 81)..... 16

Agricultural Ministry Meeting on Crop Diseases
(XINHUA, 2 Dec 81)..... 17

Triticale Breeder Addresses NPC Group Meeting
(XINHUA, 8 Dec 81)..... 18

Briefs
Huang He Soil Erosion 20
Provincial Flood Loss Figures 20

Anhui

Briefs
Anhui County Grain Output 21
Anhui County Cotton 21
Guzhen County Agriculture 21
Tianchang County Crops 21

Beijing

Beijing City Meeting on Fighting Drought
(Beijing City Service, 27 Nov 81)..... 22

Fujian

Briefs
Fujian County Winter Crops 23

Guangdong

Briefs
Guangdong Prefecture Grain Production 24
Hainan County Grain Procurement 24
Hainan County Grain Production 24

Heilongjiang

Briefs
Heilongjiang Prefecture Grain Procurement 25
Heilongjiang County Soybean Output 25

Henan

Briefs
Major Economic Crop Production 26

Hubei

Briefs
Farm Crop Production 27

Jiangsu

Briefs
Jiangsu County Grain Harvest 28
Jiangsu Prefecture Crops 28
Jiangsu County Field Management 28
Jiangsu County Cotton Output 28
Jiangsu Beet Production 28

Jiangxi

Briefs
Jiangxi County Procurement 29
Jiangxi County Crops 29
Jiangxi Prefecture Crops 29
Economic Crop Harvest 29

Jilin

Jilin Production Teams Stop Illegal Grain Sales
(Jilin Provincial Service, 1 Dec 81)..... 30

Briefs
Jilin Grain Procurement 31
Yushu County Soybean 31

Liaoning

Briefs
Liaoning Agricultural Harvest 32

Shaanxi

Shaanxi Cadres Arrested for Selling Land
(Shaanxi Provincial Service, 5 Dec 81)..... 33

Briefs
Shaanxi Prefecture Flood Forums 34
Fufeng County Agricultural Production 34

Shandong

Briefs
NPC Deputies on Changes 35
Grain Output 35

Sichuan

Sichuan NPC Deputies Comment on Good Harvests
(XINHUA, 3 Dec 81)..... 36

I. GENERAL INFORMATION

ON AGRICULTURAL RESPONSIBILITY SYSTEMS

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[Article by Wang Songpei [3769 2646 7198] and Guo Ming [6753 2494] of the Economic Research Institute of the Chinese Provincial Academy of Social Sciences: "On 'Fixing Output Quotas for Individual Households' and 'Assigning Households Full Responsibility for Task Completion'"]

[Text] Since the 3d plenary session of the 11th CCP Central Committee, the vast numbers of rural masses and cadres have emancipated their minds, dared to practice and revived and established diverse forms of production responsibility systems according to local conditions including the production responsibility system of linking remuneration with output and that of not linking remuneration with output. In the production responsibility system of linking remuneration with output there are various forms such as the responsibility system of "specialized contracting and linking remuneration with output," the responsibility system of "unified administration, assigning responsibilities to each laborer and linking remuneration with output" and "fixing output quotas for individual households" (including "assigning the households full responsibility for task completion"). The localities where these production responsibility systems are being practiced have generally achieved notable results in boosting production. After the introduction of the production responsibility system of "fixing output quotas for individual households," poverty-stricken regions where the economy had been backward for a long time, made noticeable achievements in increasing production. Coupled with the implementation of various rural economic policies and the adoption of various measures for raising the prices for major agricultural sideline products, great changes took place in the rural economic situation and the "three depends" situation of "people there depending on grain resold to them by the state, loans for production and subsidies for relief" of these regions was put to an end, thus making contributions to the state. Over the past year, the "system of fixing output quotas for individual households" has aroused attention and concern from all sides and quarters and become the central topic for discussion concerning the fine rural situation. At the same time, there have emerged diverse views and controversies as to whether or not "fixing output quotas for individual households" is a good form of management for agricultural production and whether or not it can consolidate and develop the collective economy and uphold the socialist road. People have recently been talking more about "assigning the households full responsibility for task completion." We hold that it is of very great

theoretical and practical significance to thoroughly explore and probe the problems brought about by "fixing output quotas for individual households" and "assigning the households full responsibility for task completion."

Controversy Between 'Correct Nomenclature' and 'Beautification'

There have been divergent views among people with regard to "fixing output quotas for individual households," and even views diametrically opposed in many respects. One of the causes of this state of affairs is that people have a different understanding of the connotation of "fixing output quotas for individual households." Some people hold that it refers to "three contracts and one reward" to each household, others hold that it refers to "assigning the households full responsibility for task completion." Therefore this has produced a series of divergent views. For example:

On the nature of "fixing output quotas for individual households," one argument holds that it is "a form of the production responsibility system of linking remuneration with output and a measure for managing the collective economy." Another argument holds that it is the practice of "dividing the fields and working alone" or "at least has become a kind of incomplete collective economy." These two arguments have their own grounds. First, on the question concerning the system of ownership, the former holds that "fixing output quotas for individual households" adheres to the collective economy of the production teams and is socialist in nature, thus there are not any changes in the system of ownership while the latter holds that it has turned the collective economy into the individual economy and is a form of individual operation within the collective economy. Second, on the question of "distribution according to labor," the former maintains that "fixing output quotas for individual households" in which remuneration is based on the fixed output quotas under a contract and the contractors are rewarded or penalized when production is in excess of or below the output quotas upholds the socialist principle of distribution according to labor while the latter maintains that the practice of "fixing output quotas for individual households" and giving society a part of the products of one's labor, instead of reflecting the relations of equal exchanges of labor, in fact is their bounden duty to society, and does not essentially differ from the past practice of planting the fields, harvesting the grain, engaging in commerce and paying taxes.

On the origin of "fixing output quotas for individual households": One argument holds that it is the "product of labor subject to division of labor and coordination" which had emerged in the early stage of the movement to set up agricultural producers' cooperatives; another argument holds that it is the outcome of the correcting of the leftist mistakes which had obstructed China's agricultural collective economy.

On the role of "fixing output quotas for individual households": One argument considers that the system aims at arousing the enthusiasm of the commune members for production and bringing into play the superiority of the socialist economy in terms of organizational management; another argument considers that it is a specific measure to solve the question of providing the masses with enough to eat and to wear in areas where production is backward and the economy is in difficulty.

On a suitable scope for carrying out "fixing output quotas for individual households": One argument holds that the system is suitable not only for areas where the economy is in difficulty and production is backward but also for areas where the collective economy is relatively consolidated and agricultural production relatively advanced; another argument holds that it is a special measure under special conditions and suitable only for the economically backward border districts and mountain areas with scattered individual peasant households but not suitable for localities where the collective economy is relatively consolidated. Related to this, on the relations between "fixing output quotas for individual households" and the level of agricultural mechanization, one argument holds that after the improvement of the level of agricultural mechanization, along with the improvement of labor productivity, the work which was formerly managed by one man will then be managed by several men, thus giving rise to the need to adopt the form of responsibility system of "fixing output quotas for individual households": another argument holds that "fixing output quotas for individual households" is not suitable for implementation in regions where their agricultural mechanization has reached a certain scale, the structure of the means of production has undergone certain changes and the collective economy is already developed. In these regions, "fixing output quotas for individual households" is a supplementary form of management at most.

In addition, on the prospects for the development of "fixing output quotas for individual households": one argument holds that it is a measure of management of the collective economy which will last for a long time and that, like that collective responsibility system, this system exists today and will not vanish in the future as a form of the individual responsibility system; another argument holds that instead of being related to socialized mass production, it is a production mode related to individual handicraft undertakings. Therefore, it is only an expedient measure for a certain period and at a certain stage, and so on.

The key to the difference between the above-mentioned views lies in the different understanding of the nature of "fixing output quotas for individual households." The comrades who regard it as a form of production responsibility system of the socialist collective economy propose to give "fixing output quotas for individual households" a "correct name." But the comrades who regard it as "dividing the fields and working alone" or as an "incomplete collective economy" propose not to set too high a value on it, otherwise people are apt to unconsciously "beautify" small production.

The aforesaid conspicious differences in cognition by and large underwent two stages of development in the discussion over the past year: in the first stage, the difference centered on the distinction between "fixing output quotas for individual households" and "dividing the fields and working alone." At the same time, one argument held that the practice of "fixing output quotas for individual households" meant a retrogression to "dividing the fields and working alone," or would inevitably lapse into dividing the fields and working alone." The distinction between the concepts of "fixing output for individual households" and "dividing the fields and working alone" was basically thrashed out through discussions. "Fixing output quotas for individual households" as a form of organizational management of the collective economy under the socialist system of public ownership, while "dividing the fields and working alone" consists of

turning the collective economy under the system of public ownership into the individual economy under the system of private ownership. Recently the discussion has entered the second stage. The difference in understanding "fixing output quotas for individual households" centers mainly on the distinction between "three contracts and one reward" for each household and "assigning the households full responsibility for task completion," where both are included in "fixing output quotas for individual households." In practical life, these are both concrete forms of the measures for the organizational management of China's agricultural economy. They have much in common and also major differences in such aspects as form, method and role. However, people are used to calling them both "fixing output quotas for individual households." This has led to a certain amount of confusion in people's thinking. Using the same term to refer to different things often means that there is no common language in a discussion. This is one of the causes underlying the different understanding and even some diametrically opposed understanding of "fixing output quotas for individual households." In order to clarify the nature and connotations of "fixing output quotas for individual households" and allow it to play its intended role in practice, it is very necessary to theoretically thoroughly explore and distinguish between "three contracts and one reward" for each household and assigning the households full responsibility for task completion" in terms of both their nature and characteristics.

Rationality and Limitations of "Assigning the Households Full Responsibility for Task Completion"

The method of "assigning the households full responsibility for task completion" is that the production teams assign the land and the means of production to commune members for their use and production is carried out independently [by] the commune-member households. The commune-member households guarantee the fulfillment of the tasks of tax grain and various agricultural products delivered to the state as well as the various deductions to be handed over to the production teams and then the surplus products go to them. As the masses say: "Hand over the amount originally agreed upon to the state, reserve the full amount for the collective and the rest is all one's own." The characteristic of this method is that the land--the most basic means of production in agriculture--is still owned by the collective. The commune-member households independently manage it and are not subject to the restrictions of the production teams. Their products are not subject to the unified distribution of the production teams. Therefore, although it is a form of organizational management of the socialist collective economy, the relations between the commune members and the production teams are relatively loose. At present, this method is generally followed in areas where "fixing output quotas for individual households" is adopted. A number of production teams that "fail to hold their ground" after practicing "three contracts and one reward" for each household also go on to practice "assigning the households full responsibility for task completion."

In practical life, it is not accidental that "assigning the households full responsibility for task completion" exists widely in these areas and has even become the current major form of management there. It is the product of correcting the obstructions of leftist mistakes in rural work and its existence is objectively rational. During the "10-year internal disorder," both in industry and in agriculture, Lin Biao and the "gang of four" sabotaged socialist management, and

negated rational rules and regulations and distribution according to work. There are two conspicuous problems in the disorder of rural management. First, the system of necessary division of labor and responsibility was abolished, thus resulting in the state of "doing things with a great flourish" in the organization of labor. Second, distribution according to work was replaced by egalitarianism and it was the same whether one worked hard or not, whether one did a good job or a sloppy job, or even whether one worked or did not wirk at all, thus resulting in the practice of eating out of a "big pot." In addition to that, some cadres of the communes and their subdivisions did not take part in physical labor and instead took more than their share and there existed such unhealthy practices as corruption and waste among them. On the other hand, the commune members did more work but did not get more pay. All these practices greatly dampened the enthusiasm of the vast masses of commune members for production. They strongly demanded getting rid of this situation and acquiring greater decisionmaking power in production and distribution. After the 3d plenary session of the 11th CCP Central Committee, the production responsibility system linking remuneration with output of "fixing output quotas for each group" was extensively put into effect in the rural areas. This has overcome the past practices of "doing things with a great flourish" and eating out of a "big pot" to a large extent. Now there is a definite responsibility for work and more pay for more work, which has forcefully fired the enthusiasm of the commune members for production. However, the practice of "fixing output quotas for each group" needs relatively sophisticated organizational management. But the managerial skills of some production teams today are relatively low, and coercion, commandism and harmful directives still exist on the part of certain cadres. The commune members feel that although the practice of eating out of a "big pot" has been resolved, there exists the practice of eating from "two pots." Therefore, there have been further demands for "fixing output quotas for individual households." Further comparison of "assigning the households full responsibility for task completion" with "three contracts and one reward" for each household shows that the former is in a more favorable position to satisfy the needs of the commune members and to thoroughly put an end to the above-mentioned two problems since it gives greater decisionmaking power. In this sense, there is an objective inevitability in the emergence of "assigning the households full responsibility for task completion" and it is rational for it to be extensively popularized in certain areas. The areas which have adopted this method have mobilized the enthusiasm of the commune members for production, achieved fairly remarkable results in increasing production, improved the lives of the commune members and put an end to the poverty and backwardness which had prevailed for a long time. For instance, Fengyang County of Anhui Province was formerly a notorious poverty-stricken area. There are 20 households in the Xiaogang production team in Fengyang County's Liyuan commune. In the past, production was not carried out well there and every household had the experience of leaving the village to search for food and money. It was notorious as a "village in need of food" in reality as well as in name. After the practice of "assigning the households full responsibility for task completion," the enthusiasm of the commune members for production was considerably boosted. Everyone used their brains and busied themselves with production, thus reaping a bumper harvest the very year they adopted the system. The team's grain output was equal to the total 5 years' output from 1966-70 and the output of oil-bearing crops surpassed the total amount grown in the preceeding 20 years since cooperativization. The average per capita income from agricultural

sideline occupations all over the village reached more than 300 yuan. The team threw away the "beggar's stick" within a year and has become one of the most outstanding teams in the whole country. (See Chen Yushan: "An Account of Fengyang Village," GUANGMING RIBAO 23 Mar 81.) Cases like this are common in Fengyang County. The substantial achievements gained in the practice of "assigning the households full responsibility for task completion" shows that the adoption of this form is suitable for some places. It has readjusted the relations of production, reformed management methods, promoted the swift development of the productive forces and tallies with the law that relations of production must suit the nature of the productive forces.

But we must appreciate that there are certain limitations to the form of "assigning the households full responsibility for task completion."

First of all, from the analysis of the system of ownership of the means of production, land is the basic means of production in agriculture. In the practice of "assigning the households full responsibility for task completion," collective ownership of land by the production team is still maintained. The peasant households have only the right to use it but do not own it. They can neither rent, buy, sell nor use it for other purposes at will. For this reason, "assigning the households full responsibility for task completion" falls within the category of the collective economy and is different from dividing the fields and working alone. However, in some places, some means of production such as domestic animals would very often be turned over to the peasant households after a long period of use, breeding, purchasing and renewal. That is to say, there [are] some qualitative changes in some aspects of the system of ownership of the means of production to a certain extent. This is one aspect where "assigning the households full responsibility for task completion" differs from "three contracts and one reward" for each household.

Second, in the mode of operation, there are noticeable differences between "fixing output quotas for individual households" and "three contracts and one reward" for each household. "Three contracts and one reward" for each household is a contract by the commune members to the production team for a certain production task. Although, in form this is the same as assigning the households full responsibility for task completion, and the work is also carried out independently by the commune-member households, it is an integral part of the organic whole of the unified administration of the production teams. However, "assigning the households full responsibility for task completion" stipulates that after the fulfillment of the state purchase quotas and the deductions to be handed over to the production teams, the contractors are not subject to the unified plans of the teams since production is carried out On the basis of individual households which are responsible for their own profits and losses to a certain degree. Of course, there are still differences in principle between the decentralized operations of "assigning the households full responsibility for task completion" and the individual economy of "dividing the fields and working alone." "Dividing the fields and working alone" belongs to the realm of the individual economy under the system of private ownership while "assigning the households full responsibility for task completion" is a form of decentralized operation under the system of public ownership. At the same, "assigning the households full responsibility for task completion" still retains a certain degree of collective operation. For

instance, the production teams can interfere with the production plans of the commune-member households through their contracts; the production teams can still carry out relatively large-scale farmland and water conservancy capital construction projects under their unified administration. Meanwhile, the production teams can still put part of the products of the peasant households under their unified administration. For instance, the commune-member households must hand over such deductions for the collective as the accumulation fund and public welfare fund to the production teams. But compared with the form of "three contracts and one reward" for each household, it has more the characteristics of the small-scale operations of the commune-member households, and by the large it does not follow the unified administration and unified distribution of the production teams.

All these characteristics of the form of "assigning the households full responsibility for task completion" suit the level of productive forces of some areas and are playing a positive role. But from a long-term point of view, it will restrict the continuous growth of the productive forces. First, by the adoption of this form, there will be a certain degree of change in the ownership rights of a part of the means of production and the decentralized operations of the commune-member households will naturally be practiced. This will prevent the means of production originally belonging to the production teams from giving full play to their role. For instance, the adoption of this form is not conducive to making overall planning in production on relatively large-scale farmland, not conducive to making arrangements for crop planting according to the different plots of farmland and not conducive to giving full play to the role of the existing large-scale farm machinery and implements as well as other production facilities and to specialized laborers. Second, it cannot practice the unified distribution of the production teams. Marx pointed out: "The structure of distribution depends entirely on the structure of production. Distribution itself is a product of production whether in terms of the object of production or the form of production....The specific form in which production is carried out determines the specific form of distribution and determines the form in which distribution is carried out." ("Selected Works of Marx and Engels," Vol 2, p 98) The form of small-scale individual operation of "assigning the households full responsibility for task completion" determines the adoption of the form of distribution of taking responsibility for one's own profits and losses. This form does not entirely implement the principle of distribution according to labor in the distribution of consumer goods for everyday use and is not conducive to collective accumulation keeping pace with the rapid development of production. Third, due to its small-scale decentralized operation and its limited economic strength, "assigning the households full responsibility for task completion" is not in a position to use large-scale farm machinery and implements in a relatively big way, to adopt new technological measures to boost production and cannot very well exercise the "collective strength" of combined efforts in labor. Therefore, it cannot accommodate the greater development of the productive forces.

In a word, the form of "assigning the households full responsibility for task completion" has both rationality for its existence and intrinsic limitations. As a way of managing the present agricultural collective economy in some areas, particularly in areas where the economy is backward, the peasants are pverty-stricken and where there are relatively numerous problems among the cadres, it

has greatly aroused the enthusiasm of the commune members for production and promoted the rapid development of production. However, we must see that there are limitations in this method and that while giving full play to its positive role, we must pay attention to offering guidance to it. At present, comparatively numerous forms of diversified economic integration have emerged in some rural areas where "fixing output quotas for individual households" is practiced. This shows that after the strong points of the form of "assigning the households full responsibility for task completion" is brought into play, the enthusiasm of the peasant masses mobilized and agricultural production revived and developed, the masses will again demand to break through the limitations of "assigning the households full responsibility for task completion" and to further rapidly develop agricultural production. This is also a demand of the law that the relations of production must suit the nature of the productive forces and points out the direction of the development of "assigning the households full responsibility for task completion."

Attach Importance to Exploratory Discussion of 'Three Contracts and One Reward' for Each Household

Over the past year, we have not sufficiently discussed the form of "three contracts and one reward" during the discussion on the question of "fixing output quotas for individual households." This has not only resulted in a shallow understanding of the role of the system itself but has also affected a profound understanding of "fixing output quotas for individual households."

"Three contracts and one reward" for each household is a form of "fixing output quotas for individual households." Under this system the production teams assign crops (or other production projects) to the peasant households for their management, maintain the right to own and use the land and the means of production, adhere to several "unifications," such as unified planning, unified administration, unified accounting and unified distribution, and define the targets of the "three contracts" (contracts for work, output and costs). Production is carried out by the peasant households under the unified administration and leadership of the production teams, by observing the principle that when production is in excess of or below the output quotas, the contractors are appropriately rewarded or penalized. This form is noted for the following three characteristics: First, it upholds the leading position of the economy of the production team. It upholds the collective ownership of such means of production as land by the production teams and at the same time practices unified planning, unified administration and unified distribution. The production teams can play the role of division of labor and cooperation. They have much greater economic strength than the peasant households, they can run the production projects which the peasant households are unable to manage due to the small scale of their operations and can adopt new equipment and technological measures. Thus, it can bring into play the superiority of the unified administration of the collective economy. Second, it uses a form of "contract" to link the main operational units (the production teams) with the contracting work units (the peasant households). In terms of management and administration, "three contracts and one reward" for each household is a form of managerial method for organizing labor. The essence of the production teams' assignment of contracts for work, output and costs to the peasant households is that the production teams formulate for the peasant households

responsible for production the production targets (output or output value) and the economic conditions (the consumption of the means of production and living labor) for fulfilling the production tasks, and fix the relations of this economic responsibility by adopting a contract system. Therefore, it is a form of production responsibility system of the socialist collective economy. Third, it mobilizes the enthusiasm of the vast numbers of commune members for production. "Three contracts and one reward" for each household is both a form of labor organization of the collective economy and a way of implementing distribution according to work. In terms of labor organization, it stipulates the production responsibilities for the peasant households, thus effectively overcoming the problem of no one being responsible for production and avoiding the practice of "doing things with a great flourish." Furthermore, since the production teams stipulate the production responsibilities for the peasant households, they must create certain conditions for production for the peasant households including the necessary decisionmaking power of the peasant households under the unified administration of the production teams, that is, the peasant households have the right to plant any crops in the light of local conditions, the right to adopt any technological measures to increase production and the right to reject the arbitrary orders issued by certain leaders. These measures will ensure in terms of integration of rights and duties, that the personal enthusiasm of the peasant for production will surely be brought into play. At the same time, in terms of distribution, in practicing "three contracts and one reward" for each household, the production teams assign contracts for work, output and costs to the peasant households and stipulate the amount of remuneration (contract for work) and the standards and conditions for getting remuneration (contracts for output and costs). In his "Das Kapital," Marx dealt with the various forms of labor which can be summarized as the latent formation of labor, floating formation of labor and coagulated formation of labor. In agriculture, the latent formation of labor largely finds expression in the labor abilities of the commune members (including physical strength, intelligence and skills). This formation of labor represents the opportunities available for use in production by the laborers. The floating formation of labor is more or less equal to the labor exerted in production by the commune members. The labor in this formation includes not only effective labor but also ineffective labor which cannot create value due to changes in conditions and to improper measures. The coagulated formation of labor is manifested roughly in the materialized part of labor and in the end agricultural products. This classification of the formation of labor is of great significance in investigating the forms of remuneration for agricultural production. Agricultural production is different from industrial production. First, agricultural production is carried out in a scattered way in the open air and in vast areas as well. The quality of farm work cannot be easily checked out. Second, its production period is relatively long and is largely subject to the restrictions of natural conditions. It has no products in the stages of the process of production. Whether the labor of the peasants is productive or not or whether the quality of their labor is high or not depends on the amount of harvest that is finally reaped. Therefore, compared with not linking remuneration with output (that is, using the latent formation of labor or floating formation of labor in making remuneration), linking remuneration with output (that is, using coagulated formation of labor in making remuneration) in agricultural production is more in keeping with the principle of distribution according to work. In terms of distribution, "three contracts and one reward" for each household can closely integrate the labor of

the commune members with their personal material interests and ensure the mobilization of the enthusiasm of the vast numbers of commune members in terms of the integration of responsibility and interests.

The characteristics of "three contracts and one reward" for each household determine its nature and role and its position in the management of the socialist collective economy as well. This method adheres to the socialist public ownership of the production teams and integrates the superiority of the unified management of the socialist collective economy with the mobilization of the personal enthusiasm of the peasants and promotes the development of the socialist collective economy.

The "three contracts and one reward" responsibility system is a product of division of labor and coordination. In analyzing capitalist labor cooperation, Marx pointed out that "all relatively large-scale direct social labor or common labor needs more or less direction so as to coordinate the activities of the individual and carry out the movement of overall production." ("Das Kapital," Vol 1, People's Publishing House 1975 edition, p 367) Along with the completion of socialist transformation and on the basis of working in accordance with division of labor and coordination in China's agriculture, a demand for implementing agricultural production responsibility systems emerged. Early in 1953, the "decision on developing agricultural producers' cooperatives" of the CCP Central Committee clearly stated that it was necessary to implenent such labor organizational forms as the system of temporary division of labor among small production groups, a system of contracts for plowing for a certain season of the perennially fixed production groups or production teams and a system of contracts for plowing and output. It also stated that the quantity and quality of work should be fixed and assigned to various groups and teams. Those who overfulfill the tasks should be rewarded and those who fail to do so should be dealt with on a case-by-case basis. After that, such responsibility systems as management with fixed output quotas and short term work contracts gradually developed. At the same time, the system of not linking remuneration to output was developed into that of linking remuneration to output and then emerged the form of responsibility system of "three contracts and one reward." The "directives concerning doing a good job in the work of production management of the agricultural producers' cooperatives" issued in September 1957 by the CCP Central Committee stipulated that "it is imperative to universally promote the 'three contract system' of 'contracts for work, output and finance' and to practice the method of rewards for overfulfilling the production tasks and penalties for failing to fulfill the quota." During the "10-year internal disorder," the responsibility system of "three contracts and one reward" was cut off as revisionism by the "controlling, blocking and supressing" of Lin Biao and the "gang of four." Only after the smashing of the "gang of four" and particularly after the 3d plenary session of the 11th CCP Central Committee and the implementation of various economic policies, was this effective measure, which was summed up from practice, revived and developed extensively from the system of assigning responsibilities to each group and linking remuneration to output to that of "three contracts and one reward" for each household. From the above-mentioned facts, we can see that there are inherent causes for the emergence of the form of "three contracts and one reward" for each household. It gradually came into being along with the birth of China's collective economy and with the development of our socialist collective economy. Since

the influence of leftist mistakes has been eliminated, its role has been revived and there are great possibilities for bringing its role into full play. This process of development indicates the position of "three contracts and one reward" for each household in China's socialist agricultural collective economy and its great vitality. There is no question that it will be brought into play over a long period of time as a form of production responsibility system of the socialist agricultural collective economy.

We must understand the responsibility system of "three contracts and one reward" for each household in a broad sense. The current production responsibility system of "three contracts and one reward" for each household is a concrete form of the production responsibility system of "three contracts and one reward" which delegates responsibility to each household. In addition, there are still many other varied forms of it such as fixing output quotas for each group or each able-bodied laborer or each individual peasant. The common characteristics of these forms are linking remuneration to output and using the method of "three contracts and one reward" to integrate the superiority of the unified management of the collective economy with the personal enthusiasm of the commune members. The substance and concrete conditions of agricultural production vary since our country has a vast territory, complicated natural conditions and extremely unbalanced economic development. In the light of the experience of various places, in practicing the production responsibility system of "three contracts and one reward," it is advisable to adopt various forms in accordance with local conditions.

In addition, we must view the role of "three contracts and one reward" in terms of development. At present, some areas and especially areas which were seriously obstructed by leftist mistakes, where production is backward, the economy is poor, unhealthy practices exist among the cadres, relatively numerous problems exist in the management of the collective economy, the method of "three contracts and one reward" for each household is practiced, cannot "hold their ground," are all practicing "assigning the households full responsibility for task completion." There are internal causes for the existence of this state of affairs. However, this is a special case under the specific conditions of China's rural areas today. In the future development, "three contracts and one reward" should be able to act as an independent form of agricultural production responsibility system for a long time to come.

The Question of the Scientific Concept of Fixing Output Quotas for Individual Households

According to the present data at hand, the practice of "fixing output quotas for individual households" has existed (see RENMIN RIBAO 18 Oct 1957) in the rural areas of Zhejiang (see RENMIN RIBAO 13 Oct 1957) and Guangdong provinces since 1956, and in 1959 some rural areas of Xinxiang and Luoyang prefectures in Henan Province were also "fixing output quotas for individual households" (see RENMIN RIBAO 2 Nov 1959). During the 3 year difficult period, in Anhui Province and other places, there emerged "responsibility plots" which was similar to "fixing output quotas for individual households." In 1964, "fixing output quotas for individual households" also appeared in Yunnan, Guizhou and elsewhere. Later on, "fixing output quotas for individual households" existed one-and-off either

overtly or covertly and some places consistently adhered to it for more than two decades. This shows that there are internal regularities and indomitable vitality in the existence of "fixing output quotas for individual households." But for a long period of time, it was related to the political movements at that time and subjected to criticism. In 1957 great debate on the struggle between the two roads in the rural areas and the 1959 antirightist movement, it was taken as a major target of criticism. During the "10-year internal disorder," Lin Biao and the "gang of four" took it, together with private plots, free markets and responsibility for one's own profits snd losses, to be a crime. They launched massive campaigns to slam the so-called "three freedoms [private plots, free markets and responsibility for one's own profits and losses] and one contract" [fixing output quotas for individual households]. Later, "fixing output quotas for individual households" became a synonym for "restoration," "retrogression" and "capitalism." In fact, the so-called "fixing of output quotas for individual households" at that time included every conceivable form, even "three contracts and one reward" for each household, as well as "assigning the households full responsibility for task completion," "responsibility plots," "grain ration fields," "dividing the fields and working alone," and so forth. Together with the practice of "dividing the fields and farming alone," such production responsibility systems as "three contracts and one reward"--forms of management which suit the present level of production--were indiscriminately criticized as "retrogression," "restoration" and "capitalism." This obscured the demarcation line between the different concepts in theory and has resulted in some confusion in people's thinking. From then on, "fixing output quotas for individual households" became a "forbidden zone" in theory. People once turned pale at the mere mention of "fixing output quotas for individual households," and they still have a lingering fear about, even for a certain period of time after the smashing of the "gang of four." Besides, for a long time, all labor organizational forms which are characteristic of production being carried out independnetly by the peasant households, including the form of "assigning fixed targets for work, output and costs, with a part of the extra output as reward" and that of "assigning full responsibility for task completion, were embraced in the concept of "fixing output quotas for individual households" and discarded, causing people not to pay attention to making a distinction among the different measures of the socialist management system. "Fixing output quotas for individual households" which is customarily cited in this way has obscured the following demarcation lines: First, it has blurred the distinction between "fixing output quotas for individual households" and "dividing the fields and working alone" and denied the essential differences in the system of ownership of the major means of production by the two forms. Second, it has blurred the distinction between "fixing output quotas for individual households" and "assigning households full responsibility for task completion," thus denying the differences between the two different ways of managing the collective economy.

The indistinctness of the two above-mentioned lines has produced an impact on the following aspects both in theory and practice. First, without a distinct demarcation line between "fixing output quotas for individual households" and "dividing the fields and working alone," we will be unable to clearly understand the socialist nature of "fixing output quotas for individual households" as a production responsibility system of the collective economy. We will not dare affirm the mighty role of "fixing output quotas for individual households" in the management and administration of the collective economy and will be unable to

realize the integration of the superiority of the unified management of the collective economy with the personal enthusiasm of the commune members. The superiority of the collective economy will not be brought into play as a result. In reviewing the past, China's agriculture was so influenced by the indistinctness of the demarcation line in people's understanding that bringing into full play the role of the production responsibility system of "fixing output quotas for individual households" was delayed for two decades. Second, the blurring of differences between "fixing output quotas for individual households" and "assigning households full responsibility for task completion" prevents people from going all out to give play to the role of such production responsibility systems as "three contracts and one reward" for each household in mobilizing the enthusiasm of the commune members for production and in promoting production. At the same time it causes people to be apt to neglect the limitations of developing production in the form of small-scale decentralized operations by the peasant households, and not to do necessary work to guide China's agriculture in the direction of large-scale operation. Neither is it conducive to the promotion of the rapid growth of China's agriculture.

Theory stems from practice and must in turn practice serve. The concept of "fixing output quotas for individual households" took shape under the specific conditions of our country. It is cluttered up with varied implications, which should be threshed out. We hold that "fixing output quotas for individual households" is a scientific economic category. It has in theory specific contents and formulas of quality. "Fixing output quotas for individual households," just as its name implies, must first affirm the existence of the production teams as the main body of the collective economy and at the same time "contract" output targets to the bearers of responsibility--the peasant households. It is a way of management of the socialist collective economy. "Three contracts and one reward" for each household is a typical method which is followed in practical life in a relatively large number of cases. "Assigning households full responsibility for task completion" still exists in the category of the collective economy of the production teams and does not deny the nature of socialist public ownership of the means of production. But compared with such types of production responsibility systems as "three contracts and one reward" for each household, that of "assigning households full responsibility for task completion" already has the characteristics of small-scale scattered operations by the peasant households. In the activities of production, the characteristics of the production teams being the main body of the economy, the peasant households being the working units, the teams assigning the production targets to the peasant households and the latter contracting out the targets, are not conspicuous. It goes without saying that "assigning the households full responsibility for task completion" is essentially different from the practice of "dividing the fields and working alone" in terms of nature and role. The two must not be mixed up. Furthermore, it suits the characteristics of the development of local productive forces in some rural areas of China and has played a great propulsive role in the promotion of the recovery and development of agricultural production in these areas. This must not be neglected. However, it does not entirely tally with the scientific implication of the economic category of "fixing output quotas for individual households." From its enforcement and development, it should be further guided to move toward integrated operation. This is also different from the form of

"three contracts and one reward" for each household. The concept of "fixing output quotas for individual households" including "dividing the fields and working alone" is definitely wrong; and that is includes "assigning the households full responsibility for task completion" is also inaccurate. As a scientific concept, it must refer only to the form of production responsibility system which has the main economic characteristics of "three contracts and one reward" for each household, but does not include anything else.

First draft in April 1981, revised draft in June

CSO: 4007/122

PEASANT PAPER CARRIES AGRICULTURAL STATISTICS

HK030133 Beijing CHINA DAILY in English 3 Dec 81 p 4

[Excerpts from a ZHONGCUO NONGMIN BAO commentary: "Rural Enterprises"]

[Text] Economic readjustment has given a boost to enterprises run by China's rural communes and brigades. In the first half of this year, the total income of these enterpr ses increased by 11 percent over the same period last year.

According to Ministry of Agriculture statistics, there were 1.43 million enterprises run by communes and brigades involving 30.5 million commune members in industrial production by the end of 1980.

Their fixed assets were 32.7 billion yuan, 32 percent of the total fixed assets of communes and brigades, and their annual income was 61.4 billion yuan, 34 percent of the total commune and brigade income that year.

Their industrial output value reached 52.7 billion yuan, 10 percent that of the whole nation. They turned out over 10,000 varieties of products, many in great quantities, of which 2.3 billion yuan worth were exported.

Two years' readjustment has seen gradual rationalization of the trade structure of commune and brigade enterprises. Labor-intensive industries, especially processing of farm and sideline products and service trades, have developed rapidly.

Raising the peasants' living standards in a country with a big rural population but not enough cultivated land, a poor economic base and under developed commodity production has been a big problem.

The thriving commune and brigade enterprises are playing an important role in solving this problem.

First, they have supported agricultural production. In the past 3 years, they have provided 7.6 billion yuan to agriculture.

Second, they have greatly increased peasants' income. In 1980, they paid 11.9 billion yuan in wages to commune members engaged in industrial production.

And finally, they have gradually normalized the rural economic structure, and provided an important way out for rural surplus labor, which constitutes 30 to 40 percent of the total labour force in China's countryside.

CSO: 4020/42

PROVINCES REAP GOOD HARVESTS IN 1981

OW020921 Beijing XINHUA in English 0723 GMT 2 Dec 81

[Text] Beijing, December 2 (XINHUA)--Anhui and Henan provinces and the Xinjiang Uygur Autonomous Region report increases in grain and industrial crops this year, according to reports from their agricultural departments.

Grain output of East China's Anhui Province, one of the country's major agricultural centers, surpassed 17 million tons this year, 2.5 million tons more than last.

An all-time high of oil-bearing seeds, tea, tobacco, silk cocoon and fruit is reported. The output of oil-bearing seeds was 950,000 tons, 91.5 percent more than the peak 1980 record. Output of tobacco increased by 230 percent.

Peasants in central China's Henan, another major agricultural province, harvested more than 22.5 million tons of grain this year, one million tons more than last year. Except for cotton, which was slightly less than the record year of 1980, output of all industrial crops rose. Compared with last year, output of soy beans increased by 44 percent, rapeseed 47 percent, sesame 75 percent and tobacco 85 percent.

With extended hectarage of industrial crops, this year's agricultural output in terms of value is expected to reach 11,500 million yuan, up 4.4 percent. Average peasant income from the collective will rise 13 percent.

The Xinjiang Uygur Autonomous Region, northwest China, is having its fourth consecutive year of good harvests. Grain output approached last year's number of 3.89 million tons. Cotton output was 103,500 tons, 31 percent more than last year.

CSO: 4020/42

AGRICULTURAL MINISTRY MEETING ON CROP DISEASES

OW040445 Beijing XINHUA Domestic Service in Chinese 1255 GMT 2 Dec 81

[Excerpts] Beijing, 2 Dec (XINHUA)--In order to promote the development of agricultural production, the Ministry of Agriculture held a national meeting in Beijing from 25 November to 2 December to exchange experience in the survey and report of plant diseases and insect pests. The meeting commended a number of advanced collectives and individuals who have made outstanding achievements in serving the people wholeheartedly in the countryside and in surveying and reporting plant diseases and insect pests.

Doing a good job in surveying and reporting plant diseases and insect pests is groundwork for the implementation of the policy of protecting plants by "laying stress on prevention while using comprehensive methods." During the past 30 years, our country has made rapid development in the work of surveying and reporting plant diseases and insect pests. At first there was no survey and report stations. Now survey and report stations for crop diseases and insect pests have been set up in more than 1,600 prefectures and counties of the 14 provinces, municipalities and autonomous regions with more than 7,000 professional workers.

The meeting reiterated the importance of surveying and reporting plant diseases and insect pests and called on various localities, especially commercial grain bases and areas of intensive economic crop production, to set up or improve survey and report stations and run them in the same good manner as running weather stations.

CSO: 4007/120

TRITICALE BREEDER ADDRESSES NPC GROUP MEETING

OW081222 Beijing XINHUA in English 1208 GMT 8 Dec 81

[Text] Beijing, 8 December (XINHUA)--A leading Chinese agronomist proposed that greater efforts be made to disseminate agro-techniques, particularly in China's remote mountain areas.

Professor Bao Wenkuei, the agronomist who developed the first octoploid triticale ever used in production in the world, said this at a group meeting of the current National People's Congress.

He said he supported Premier Zhao Ziyang's ten principles for economic progress, which give first place to the development of agriculture.

"The remove areas I visited do not have enough scientists and agro-technicians and the work of spreading scientific agricultural knowledge there lags behind that on the plains and coastal areas," Professor Bao Wenkuei said.

He said that a policy of encouraging scientists to work in remote areas should be worked out by the government and that the work should be improved in disseminating seed-breeding and other agro-techniques.

Bao Wenkuei, 66, has been engaged in breeding triticale since his return to China from the United States in the early fifties. He obtained triticale strains by crossing wheat with rye. Unlike the hexaploid triticale developed by foreign scientists, it is an octoploid, that is, each of the octoploid triticale cells contains eight sets of chromosome complement instead of six.

The octoploid triticale has been adopted on 6,600 hectares of land in mountain areas in Southwest and Northwest China. It is resistant to cold and grows well in poor soil, yielding about 1.5 to 2.2 tons per hectare, much higher than the local varieties of tye or wheat.

In order to spread the triticale and study its characteristics, Professor Bao has made many trips to Wumeng and Qinling Mountains rising more than 2,000 meters above sea level, where people of the Yi, Miao, Hui and Han nationalities live.

According to available data, Professor Bao said, the triticale developed in Canada and Mexico give high yields but the seed plumpness is not so good. The octoploid triticale he developed has a higher stem and yields somewhat lower, but it has better seed plumpness and produces flour or better quality.

Bao Wenkuei said he and his colleagues are now developing better strains of triticale that give higher yields and have shorter stems.

CSO: 4020/44

BRIEFS

HUANG HE SOIL EROSION--Xian, 1 Dec (XINHUA)--Soil erosion had by the end of last year been brought under control in areas totalling 75,000 square kilometers on the upper and middle sections of the Yellow River basin, 17.5 percent of the area where the problem needs to be tackled. This was announced at the first session of the water and soil conservation committee for middle reaches of the Yellow River held last month in Xian, capital of Shaanxi Province. People living along the upper and middle sections of the river have over the past 3 decades planted trees and grass to 3.53 million hectares. This helps prevent about 100 million tons of top soil from being washed away, according to the meeting. Meanwhile, people have built terraced, raised and irrigated fields totalling 3.18 million hectares, which has helped check soil erosion. [Beijing XINHUA in English 0730 GMT 1 Dec 81 OW]

PROVINCIAL FLOOD LOSS FIGURES--According to initial statistics of concerned departments, in Sichuan of the 135 counties which received torrential rains [last summer], 119 counties suffered calamities, 53 counties and cities and 580 towns were inundated, 1.6 million buildings were inundated and collapsed, about 200,000 households and 1 million people suffered severe hardships, 12.51 million mu of crop land was destroyed, the output of grain was reduced by 3 billion jin and the direct economic loss was approximately 2.5 billion yuan. Because of the floods, the output of grain in Shaanxi was reduced by three billion jin and cotton by one million dan. Likewise floods in Heilongjiang reduced grain output by five billion jin. [Excerpt] [Beijing ZHONGGUO LINYE (FORESTRY IN CHINA) in Chinese No 11, 1981 p 8]

CSO: 4007/123

BRIEFS

ANHUI COUNTY GRAIN OUTPUT--Mengchen County's total grain output in Anhui Province this year is expected to reach 743 million jin, 144 million jin more than in 1980 and 257 million jin more than in 1978. [OW081441 Hefei Anhui Provincial Service in Mandarin 1100 GMT 7 Dec 81]

ANHUI COUNTY COTTON--By 22 November, Anhui's Chuxian County had overfulfilled the annual ginned cotton purchasing quota by more than 100 percent. Statistics show that the county's 40,000 mu of cotton fields yielded 25,000 dan of ginned cotton this year, an increase of more than 6,000 dan over last year. [OW041349 Hefei Anhui Provincial Service in Mandarin 1100 GMT 2 Dec 81]

GUZHEN COUNTY AGRICULTURE--Anhui's Guzhen County has vigorously developed a diversified economy, thereby increasing income of the collective and the peasants. This year per capita income of its 410,000 agricultural population reached 366 yuan, 195 yuan of which were derived from diversified economy. This year grain acreage was 225,000 mu less than last year, but total output exceeded 470 million jin, topping last year by 35.9 percent. [OW051325 Hefei Anhui Provincial Service in Mandarin 1100 GMT 4 Dec 81]

TIANCHANG COUNTY CROPS--Hefei, 5 Dec (XINHUA)--Tianchang County, Anhui, in 1981 produced more than 720 million jin of grain and 38.56 million jin of rapeseeds. The county will deliver 250 million jin of grain, including the grain as tax in kind and the surplus grain sold, to the state. [OW051325 Beijing XINHUA Domestic Service in Chinese 0055 GMT 5 Dec 81]

CSO: 4007/121

BEIJING CITY MEETING ON FIGHTING DROUGHT

HK030649 Beijing City Service in Mandarin 2300 GMT 27 Nov 81

[Text] The Beijing Municipal CCP Committee and government held a meeting in Huairou County on 26 and 27 November on fighting drought and saving water in the city outskirts. The meeting demanded that party organizations and government at all levels in the outskirts launch the masses to immediately mobilize to do everything possible to fight drought and save water and win a good harvest next year.

The meeting pointed out: The fight against drought in the outskirts this year is different from past years. There is even less water in the reservoirs than last year, while the water table has continued to fall. In some places this situation is rather serious. According to the weather forecast, drought will continue through the first half of next year. The water shortage caused by 3 successive years of drought poses extremely great difficulties for next year's agricultural production.

The meeting proposed emergency measures for further stepping up the work of fighting drought and saving water and demanded that water conservation departments at all levels formulate rational norms for irrigation. They should train electricians, mechanics and water conservation personnel in a planned way, establish various forms of responsibility system and put them on a sound basis. In farmland water conservation construction, it is necessary to maintain the policy of "heavier burden for greater benefit, lighter burden for smaller benefit."

The conference also called for stepping up water conservation construction in the mountains. It is necessary to adopt various measures such as channeling, storing, and damming water to solve the water shortage problem there. At present special attention must be paid to doing everything possible to solve the drinking water problem for humans and animals in some mountain communes and brigades.

The conference also stressed: In accordance with the conditions in the Beijing outskirts, government at all levels must rapidly shift the focus in water conservation work to management and strengthen the management of existing projects. It is necessary to get more water, benefit and income from improved management, and constantly improve management standards.

The conference called on leaders at all levels to enhance revolutionary spirit, dare to take charge, and truly grasp water conservation as a major affair for the city's industrial and agricultural production and the life of the people in urban and rural areas.

CSO: 4007/120

BRIEFS

FUJIAN COUNTY WINTER CROPS--Longhai County, Fujian Province, has planted 125,000 mu of wheat and 35,000 mu of vegetables, tobacco and rapeseed. [OW081441 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 6 Dec 81]

CSO: 4007/124

BRIEFS

GUANGDONG PREFECTURE GRAIN PRODUCTION--This year, the total grain production of Shaoguan Prefecture in Guangdong Province is expected to raise by 150 million jin over the bumper harvest last year, showing an increase of more than 4 percent. Production of other cash crops also increased including beans, fruit, cane sugar, sweet potatoes, fish, and so on. Since the beginning of this year, all counties in the prefecture have paid attention to implementing the various forms of the production responsibility system in the light of the local conditions. While implementing the production responsibility systems, the agricultural departments in the prefecture have adopted various methods to popularize scientific cultivation, enabling the peasants to increase production. The area for cultivation of hybrid rice has been expanded by 20 percent, mid and late crops have been cultivated in an area of 1.50 million mu, accounting for more than 50 percent of the total area for paddy rice. The average per unit yield has increased by 100 to 200 jin. [HK040921 Guangzhou Guangdong Provincial Service in Mandarin 2330 GMT 2 Dec 81]

HAINAN COUNTY GRAIN PROCUREMENT--Dan County in Hainan Island has overfulfilled this year's grain procurement task. As of 26 November, 22,374 million jin of grain has been procured. Dan County has reaped a bumper early crop harvest this year and 79.2 percent of the procurement quota for summer grain has been fulfilled. Dan County has worked hard to increase production of late crops despite severe drought in the northern part of the county in the latter half of the year. [HK040921 Haikou Hainan Island Service in Mandarin 0330 GMT 2 Dec 81]

HAINAN COUNTY GRAIN PRODUCTION--As of 25 November, Lingshui County in Hainan Island had already overfulfilled this year's grain procurement task. Grain procurement has increased by 1.89 million jin compared with the corresponding period last year. Peasants' enthusiasm for production in Lingshu County has been greatly enhanced by the implementation of the various forms of the production responsibility system. Harvest of both early and late crops has increased, and procurement of summer grain has already been fulfilled by 68 percent. [HK040921 Haikou Hainan Island Service in Mandarin 0330 GMT 2 Dec 81]

CSO: 4007/124

BRIEFS

HEILONGJIANG PREFECTURE GRAIN PROCUREMENT--Songhuajiang Prefecture in Heilongjiang Province had overfulfilled the annual grain procurement plan of 1.45 billion jin by 25 million jin as of 25 November. Bayan County procured 510 million jin of grain and Bin County procured 100 million jin of soybeans, all-time records for the counties. [SK280341 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 26 Nov 81]

HEILONGJIANG COUNTY SOYBEAN OUTPUT--Harbin, 3 Dec (XINHUA)--Binxian County, Heilongjiang Province has procured over 100 million jin of soybeans, thus overfulfilling the state soybean procurement task by over 23 million jin. The county expanded the area sown with soybeans to 600,000 mu, which accounts for 31.5 percent of the total area of cultivated land. The per-mu output reached 260 jin, increasing by 10 percent over 1980. [OW041351 Beijing XINHUA Domestic Service in Chinese 0024 GMT 3 Dec 81]

CSO: 4007/124

BRIEFS

MAJOR ECONOMIC CROP PRODUCTION--Following this year's increased output of rapeseed of more than 120 million jin, Henan's economic crops including tobacco, sesame, jute and ambary hemp will also bring good news of bumper harvests. The total output of tobacco leaf increased from 380 million jin in 1980 to 680 million jin this year setting a new historical record. The total output of sesame increased from 160 million jin last year to 280 million jin this year. Total output of jute and ambary hemp increased from last year's 140 million jin to 180 million jin in 1981. [Excerpt] [Beijing RENMIN RIBAO in Chinese 18 Nov 1981 p 1]

CSO: 4007/123

BRIEFS

FARM CROP PRODUCTION--Last year Hubei suffered severe damage from floods. This year agricultural production recovered from the disaster and expanded. The following information was provided by concerned departments. This year the output of summer grain for the province as a whole was reduced while the summer oil-bearing crops had a big bumper harvest. The output of early rice increased over last year but did not reach the 1979 levels. The output of intermediate rice which proportionally is the largest component of the grain crop could possibly exceed the big bumper harvest of 1979. Late rice is also seeing a bumper harvest. Cotton will have a fairly large increase over last year. [Excerpt] [Beijing RENMIN RIBAO in Chinese 22 Nov 81 p 1]

CSO: 4007/123

BRIEFS

JIANGSU COUNTY GRAIN HARVEST--Huaiyin County has reaped an all-round bumper harvest this year. Compared with last year, the county's total grain output rose by 25 percent, and its total output of oil-bearing crops and tobacco increased by 100 percent. [OW041349 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 2 Dec 81]

JIANGSU PREFECTURE CROPS--Zhejiang Prefecture in 1981 produced 118 million jin of rapeseeds and 450,000 dan of cotton, registering 90 percent increase in rapeseed output and 45 percent increase in cotton production as compared with 1980 harvests. [OW041349 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 3 Dec 81]

JIANGSU COUNTY FIELD MANAGEMENT--Gaoyou County, Jiangsu, has completed sowing of 560,000 mu of wheatfields, and Xinghua County has collected enough manure for 200,000 mu of wheatfields. [OW001441 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 7 Dec 81]

JIANGSU COUNTY COTTON OUTPUT--This year Dongtai County, Jiangsu, has harvested 950,000 dan cotton, topping other counties in the provicne for cotton output. [OW081143 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 5 Dec 81]

JIANGSU BEET PRODUCTION--Huaiyin County, Jiangsu, reaped a bumper beet harvest this year with a total output of some 19,000 dun. This surpassed last year's production by 4,960 dun. [OW081143 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 6 Dec 81]

CSO: 4007/124

BRIEFS

JIANGXI COUNTY PROCUREMENT--Ningdu County has fulfilled this year's grain, edible oil and hog procurement plans. In the first 10 months of this year, the county procured 44,621 head of hogs. This year's grain procurement is 6.52 million jin more than the 1980 procurement, while the 1981 edible oil procurement is 51,000 jin above that of 1980. [OW041349 Nanchang Jiangzi Provincial Service in Mandarin 1100 GMT 30 Nov 81]

JIANGXI COUNTY CROPS--Nancheng County reaped 2.6 million jin of beans this year. [OW041349 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 1 Dec 81]

JIANGXI PREFECTURE CROPS--Shangrao Prefecture this year has planted 840,000 mu of rapeseed. [OW041349 Nanchang Jiangxi Provincial Service 1100 GMT 1 Dec 81]

ECONOMIC CROP HARVEST--This year the major economic crops in Jiangxi produced an all-round bumper harvest. The output of cotton which has already been harvested increased more than 10 percent compared to 1980. The output of jute, ambary hemp, ramie and rapeseed all separately increased more than 60 percent over last year. Flue-cured tobacco increased more than two times. Tea increased 10 percent. Silkworm cocoons increased 25 percent. More sugarcane was planted this year and it grew well so that the output of sugarcane should set new historic highs. This year, because the citrus crop was managed carefully and increased acreage came into production, an increase in output of more than 20 percent is expected. [Text] [Beijing RENMIN RIBAO in Chinese 16 Nov 81 p 1]

CSO: 4007/123

JILIN PRODUCTION TEAMS STOP ILLEGAL GRAIN SALES

SK020550 Changchun Jilin Provincial Service in Mandarin 1100 GMT 1 Dec 81

[Text] According to our correspondent (Jin Zhengnan), (Yezuhe) Commune in Hailong County recently severely punished the (Jinhong) brigade party committee and four production teams for illegally selling rice at free markets at a higher price instead of handing it over to the state.

From 7 October to 7 November, the party committee of (Jinhong) Brigade and Nos 1, 3, 3 and 5 production teams sold 65,400 jin of rice to free markets without authorization. This is a violation of the county government's policy prohibiting private sale of grain during the grain purchasing period.

After the sales were uncovered, the commune's party and administrative committees immediately assigned several personnel to investigate. Following thorough investigation, they meted out severe punishment: The four production teams shall hand over to commune authorities 3 percent of the proceeds from the rice sales as a fine within a specified time. In calculating surplus grain, the rice illegally sold should be included in the total output. The four production teams shall sell portions of the surplus grain to the state according to the ratio specified in the policy. The four production teams must hand in 60 percent of the proceeds from the illegally sold rice for repayment of state loans. The leader of the No 5 production team, which illegally sold the greatest amount of rice and whose case is therefore the most serious, will undergo severe criticism and education. Punishment will be meted out later depending on his attitude in acknowledging his mistakes.

CSO: 4007/120

BRIEFS

JILIN GRAIN PROCUREMENT--Spring Prefecture, Liaoning Province's key graining producing area, has reaped a bumper harvest of grain. As of 6 December, this prefecture had stored some 1.9 million jin. The grain output of the prefecture in 1981 is expected to be over 5 billion jin. [SK080648 Changchun Jilin Provincial Service in Mandarin 2200 GMT 7 Dec 81]

YUSHU COUNTY SOYBEAN--Changchun, 5 Dec (XINHUA)--Yushu County, Jilin, in 1981 produced some 150 million jin of soybean, increasing by about 70 percent as compared with last year. By the end of November, the county had delivered and sold some 81 million jin of soybean to the state. The county grew 840,000 mu of soybean this year. [OW051325 Beijing XINHUA Domestic Service in Chinese 0121 GMT 5 Dec 81]

CSO: 4007/121

BRIEFS

LIAONING AGRICULTURAL HARVEST--Liaoning Province's 17 commodity grain producing counties have reaped a bumper harvest in 1981. Output of grain and soybeans is expected to be 12.39 billion jin, an increase of 350 million jin over 1980. Output of oil-bearing seeds is expected to be 1.36 million dan, an increase of 300,000 dan over 1980. [SK080648 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 7 Dec 81]

CSO: 4007/124

SHAANXI CADRES ARRESTED FOR SELLING LAND

HK050701 Xian Shaanxi Provincial Service in Mandarin 0500 GMT 5 Dec 81

[Text] According to Shaanxi Ribao, Dingbian County recently hald a mass rally, at which the public security departments arrested according to law [Liu Shengliang) and (Zhang Dengpu), who had sold collective land.

(Liu Shengliang) is leader of the No 2 production team of (Guojiamiao) brigade of (Jinlongcun) commune in this country, and (Zhang Dengpu) is the deputy team leader. In October this year, these two presided over a meeting of the production team committee, which decided to sell 7.5 mu of the team's land to some workers of organs and units to build houses, and also drew up a contract. The land was to be sold by (Liu Shengliang), (Zhang Dengpu) and two other members of the team committee. The price was fixed at 1,134 yuan per mu; they would keep for themselves anything in excess of that figure. After the meeting, (Liu Shengliang) and (Zhang Dengpu) sold 1.16 mu of land to 4 workers of the county hospital, Xinhua bookshop and construction team. The price was 1,680 yuan per mu. They thus made a profit of 630 yuan. Thanks to the fact that the county government rapidly dispatched a work team, they did not have time to sell the rest of the land.

Apart from that, in Spring and Summer this year (Liu) and (Zhang) sold 5 team buildings, including 9.2 mu of land, to state workers.

After investigation, a work team organized by the county public security bureau, people's procuratorate and people's court held that by using their powers to sell collective land, (Liu Shengliang) and (Zhang Dengpu) had violated article 125 of the criminal law and should be arrested by the public security organs. The work team also announced that the land sales were invalid, and that the cadres, workers and units concerned that had privately bought the production team's land must also be seriously dealt with.

CSO: 4007/124

BRIEFS

SHAANXI PREFECTURE FLOOD FORUMS--At the suggestion of the Hanzhong Prefectural Science and Technology Committee and the prefectural science and technology society, the prefectural water conservation society, the prefectural forestry society and the prefectural construction society each held a forum to analyze and study and causes for this year's floods in the prefecture and the issue of harnessing the water resources in the Han River basin. The forums put forth important opinions and suggestions. The scientific and technological circles held that there were many reasons for this year's floods and the immediate cause was that rainfall was concentrated in the prefecture for a long period of time. Other important reasons were that the prefecture had reclaimed land at the expense of forests for a long period of time, resulting in soil erosion; and had blindly built fields on flood land, narrowing the riverbed. After analysis and study, the scientific and technological workers put forth many valuable opinions and suggestions. These included the idea that harnessing rivers must presuppose the utilization of the mountains and harnessing tributaries must presuppose the utilization of their source. It is therefore necessary to continue to adhere to the principle of comprehensively utilizing mountains, rivers and forestry. It is essential to strengthen protection of the sources of all main tributaries of the Han River and of forests, to curb indiscriminate logging and reclaiming of land at the expense of forests and also to afforest. [HK031324 Xian Shaanxi Provincial Service in Mandarin 0500 GMT 3 Dec 81 HK]

FUFENG COUNTY AGRICULTURAL PRODUCTION--Fufeng County in Shaanxi Province reaped a bumper agricultural harvest this year. The total grain output in the county reached 340 million jin, basically catching up with that of 1979; total output of rapeseed reached 17.56 million jin and as of the end of September, 12.46 million yuan had been obtained from diversification items, showing an increase of 39.5 percent over the corresponding period last year. The total income of commune and brigade enterprises amounted to 9 million yuan, showing an increase of 10.2 percent over the corresponding period last year. Up until now, the county has already sold to the state 42.17 million jin of grain, showing an increase of 45.4 percent over the corresponding period last year, 7.06 million jin of rapeseed, showing an increase of 12.5 percent; and procurement of pork, eggs and other products also increased. [HK040903 Xian Shaanxi Provincial Service in Mandarin 0500 GMT 2 Dec 81 HK]

CSO: 4007/120

BRIEFS

NPC DEPUTIES ON CHANGES--Beijing, 5 December (XINHUA)--Peasants in a poor area in northwestern Shandong Province now have "enough grain in their homes and money in their pockets," N.P.C. deputies from the area told XINHUA today. The area has 40 counties, [and] used to be known as one of the ten poorest areas in China. The two deputies from there could not suppress their pride when they mentioned how Premier Zhao Ziyang had described the changes in their area in his government work report. Deputy Hu Anfu, party secretary of Huimin County on the North Bank of the Yellow River, said that the county had ended its grain-poor history that began in 1958. This year its 38,700 hectares of grain fields have a harvest of 3.9 tons per hectare, a 70 percent rise over last year. The county also reaped a bumper harvest of cotton and peanuts. Since 1979 the county has exercised a new responsibility system of fixing farm output quotas for each household and reaped good harvests for 3 years running, the N.P.C. deputy said. Peasants in the county work under a unified production plan and share the use of water conservancy projects and big and medium-size farm machines. [Text] [OW051707 Beijin Gxin Hua in English 1507 GMT 5 Dec 81]

GRAIN OUTPUT--Thanks to implementation of the responsibility system, Huimin and Jining prefectures, Shandong Province, have reaped a bumper harvest of all crops this year. In Huimin Prefecture, grain output totals 3.1 billion jin, an increase of 15 percent. Cotton output totals 1.3 million dan, an increase of 50 percent, and per capita distribution is estimated at 110 yuan, an increase of 40 yuan over 1980. In Jining Prefecture, ginned cotton output totals 1.2 million dan, 3.4 times that of 1978. Though the acreage sown in grain decreased 540,000 mu from 1978, the grain output still increased 220 million jin over 1978. Per capita distribution is 2 times that of 1978. [SK20910 [as printed] Jinan Shandong Provincial Service in Mandarin 2300 GMT 1 Dec 81 SK]

CSO: 4007/120

SICHUAN NPC DEPUTIES COMMENT ON GOOD HARVESTS

OW031805 Beijing XINHUA in English 1516 GMT 3 Dec 81

[Text] Beijing, 3 December (XINHUA)--China's most populous province has reaped a good harvest this year after overcoming the worst floods in the past century, National People's Congress deputies from Sichuan told XINHUA today.

Sichuan Province has carried out the guideline advocated by Premier Zhao Ziyang for agricultural development and reaped good harvests for 5 years running. Torrential rains damaged over one million hectares of Sichuan's farmland and wiped out nearly one third of the standing crops this summer. But the province harvested 250,000 tons more grain than in 1980, which was a record year in history, and it now has 50 million head of pigs on hand, leading the country in number.

Deputy Lu Dadong, governor of the province, said that Zhao Ziyang paid great attention to agriculture hen he was the first secretary of the provincial Communist Party committee from October 1975 to the beginning of 1980. He paid quite a number of visits to major farming areas and gave many good instructions. He said in 1979 that agricultural expansion must "depend on policies and the use of science" as he did in his report now. The governor owed [as received] Sichuan's five good harvests to carrying out this principle of depending on policies and the use of science. "Sichuan must go on sticking to this principle," he said.

Du Xinyuan, head of the Sichuan delegation and chairman of the standing committee of the provincial people's congress, said that the premier had summed up the experience in different parts of the country and charted the course for an all-round development of agriculture.

CSO: 4020/44 END

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China Report

AGRICULTURE

No. 180

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JPRS 79741

24 December 1981

CHINA REPORT

AGRICULTURE

No. 180

CONTENTS

PEOPLE'S REPUBLIC OF CHINA

I. GENERAL INFORMATION

National

Further Reforms in Rural Economy Advocated
(NONGYE JINGJI WENTI, 28 Oct 81) 1

NPC Deputies Support Tree-Planting Drive
(XINHUA, 9 Dec 81) 9

Fujian

Briefs
Fujian Prefecture Late Rice 10
Jianyang Prefecture Grain 10

Hebei

Farm Development Program for Heilonggang Region Proposed
(Hou Xueyu; HEBEI RIBAO, 2 Nov 81) 11

Bumper Cotton, Grain Harvests in Wuqiao Country Reported
(HEBEI RIBAO, 28 Oct 81) 17

Success Reported in Experiments on Maximum Bearing Time for Fruit Trees
(Chen Yichao; GUANGMING RIBAO, 10 Nov 81) 19

Jiangsu

Briefs
Country Field Management 20
Jiangsu Prefecture Agriculture 20
Jiangsu Country Agriculture 20

Shanghai

Institute of Animal Husbandry Successes, Ongoing Projects Described
(Wang Ruilin; KEXUE ZHONGTIAN, Sep 81) 21

Shanxi

Briefs
Heshun County Fall Sowing 23
Doubling of Sugarbeet Output 23

Sichuan

Briefs
Hechuan Country Grain Production 24

Yunnan

Increased Procurement of Third Quality Farm Products Urged
(YUNNAN RIBAO, 23 Oct 81) 25

Ins, Outs of Wheat Growing in Yunnan Surveyed
(He Zhaoxing; YUNNAN RIBAO, 28 Oct 81) 27

Briefs
Farm Product Purchase Increases 29

Zhejiang

Greater Emphasis on Ocean Fish, Shrimp Hatching Urged
(ZHEJIANG RIBAO, 27 Oct 81) 30

Briefs
Development of Foodstuff Industry 32
Agricultural Bank Loans 32

II. PUBLICATIONS

Table of Contents of 'ZHONGGUO XUMU ZAZHI' No 4, 1981 34

Table of Contents of 'SENGONG KEJI TONGXUN' No 8, 1981 36

Table of Contents of 'SENGONG KEJI TONGXUN' No 9, 1981 38

HONG KONG MEDIA ON CHINA

Five Measures Outlined for China's Agricultural Development
(Zhan Wu; TA KUNG PAO, 8 Nov 81) 40

ABSTRACTS

AGRICULTURE

DONGBEI NONGXUEYUAN XUEBAO [JOURNAL OF NORTHEAST AGRICULTURAL COLLEGE] No 3, 10 Oct 81 44

AGRICULTURAL RESEARCH

ZHIWU BAOHU [PLANT PROTECTION] No 5, 8 Oct 81 46

FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] No 5, 10 Oct 81 47

NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] No 10, 17 Oct 81, No 11, 17 Nov 81 51

BOTANY

ZHIWU XUEBAO [ACTA BOTANICA SINICA] No 5, Sep 81 53

ENTOMOLOGY

KONCHONG ZHISHI [ENTOMOLOGICAL KNOWLEDGE] No 5, Sep 81 55

I. GENERAL INFORMATION

FURTHER REFORMS IN RURAL ECONOMY ADVOCATED

Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese No 10, 28 Oct 81 pp 3-6

[Article Dated 28 August 1981: "Summary of National Symposium on Agricultural Economic Problems"]

[Text] The National Symposium on Agricultural Economic Problems was held between 20 and 28 August 1981 at Yantai City, Shandong Province. A total of 191 delegates from 105 units attended this symposium. The symposium received a total of 117 academic treatises and investigation reports. This symposium was held by the China Agricultural Economics Society under the auspices of the State Agricultural Commission, and was convened under the direct guidance of the State Agricultural Commission. In order to do a good job of the zoning of agriculture, in addition to carrying out surveys of natural resources, it has also been necessary to conduct surveys of socio-economic conditions, so in the spring of 1980 the State Agricultural Commission organized more than 400 people in research units in institutions of high learning, and in scientific institutes of organizations concerned for a period of somewhat more than 1 year to conduct surveys. These surveys were carried out in 11 selected counties throughout the country (Tongxian, Jiading, Wuxi, Wuxian, Taoyuan, Guanghan, Polo, Luancheng, Hailun, Changji, and Yanchi counties). Surveys were on six topics (agricultural modernization, the structure of agricultural production, comprehensive development of the rural economy, costs and prices of farm products, proper handling of the relationship among the three [the state, the collective, and individuals], and the farm products procurement system). Proceeding from the foundation of these surveys, the symposium integrated the current situation in rural villages nationally, and formed discussion groups to discuss these six topics. In addition, they also discussed the two special topics of the system of responsibility for farm production and agricultural zoning. Now let us present a capsulization of discussions below.

China's rural villages have entered a period of all around economic reform. Since the publication of the CCP Central Committee Document 75, everywhere various forms of a system of responsibility for production have been established including contracting of special endeavors, linking production to the calculation of remuneration, and linking production to the workforce, but contracting production with individual households and contracting jobs with individual households have developed fastest of all. Institution of contracting production with individual households, and contracting jobs with individual households have brought

about tremendous changes in all aspects of the rural economy, and have also affected various fields in the superstructure, making people take notice in every way. In the unit discussions, delegates from 13 provinces and municipalities, including those from Henan and Gansu, individually provided briefings on development, experiences and problems in their systems of responsibility for farm production. Some delegates also offered some specific recommendations about current development of the system of responsibility for production.

Everywhere contracting production with individual households and contracting jobs with individual households has developed rapidly. In Gansu and Anhui provinces, for example, such "double contracting" amounts to 80 percent, 60 percent of it being contracting jobs with individual households. In Henan, contracting production with the workforce, contracting production with individual households, and large scale contracting of responsibilities totals 80 percent, and after autumn, greater development will occur. The masses in Henan say, "Contracting of small jobs can't be certain; linking production to the workforce is unsteady; and large scale contracting of responsibilities can't be stopped." In all teams where contracting of production with individual households, or contracting of jobs with individual households has been instituted, the enthusiasm of the masses runs very high and production develops very rapidly. Some "three dependent" production teams got back on their feet within a single year. This year a great flood occurred in Sichuan Province, and commune members where contracting for production with individual households had been done promptly set about straightening up the seedlings and washing them off to reduce losses after the waters had receeded. In other forms such as specialized contracting, linking of production to the calculation of remuneration, and linking production to the workforce, whenever practices accorded with local conditions and the desires of the masses, and when leadership was strengthened, output also increased.

Actual practice has already exceeded Document 75's provisions. Delegates from all over suggested that the Central Committee promptly set forth a new document on the basis of the new situation. They also suggested that farm departments put out guidelines for implementation of various forms of a system of responsibility so that all jurisdiction can follow them.

At the present time in rural villages everywhere, some cadres have mixed feelings about "double contracting." Some are at loggerheads with the masses and will not permit their implementation. Some are unable to stop them so they throw up their hands and have nothing to do with them. There are many reasons for this state of affairs. Satisfactory solutions must be found; there can be no simplistic condemnations.

On other frontlines too, some people lack understanding of the great transformation that is currently underway in rural villages, and everyone is discussing them. In the course of work, some even discriminate against and treat with rejection peasants who practice "double contracting." As a delegate from Gansu said, the Gansu Bank of Agriculture began not to issue loans to production teams practicing the contracting of jobs with individual households. Later on it agreed to the loans, but interest was to be calculated at individual household rates, which were more than 50 percent higher than for loans to production teams under unified operation and unified distribution. Delegates from all over said

that to perfect a sound system of responsibility for agriculture, problems that bear upon the internal operation of communes and brigades are fairly easily solved, problems that bear upon supply and marketing, banking, and farm machinery are difficult to solve. Therefore, it is necessary to publicize throughout society the profound economic reforms taking place in rural villages. Once this is properly understood, everyone will come forward to support the transformation.

All forms of the system of responsibility, and particularly "double contracting," have exhibited tremendous vitality and have advanced the development of production. However, there is still a gradual process of adaptation currently among cadre leaders, but among various superstructures concerned, some are still not compatible, and various system of responsibility management systems also require gradual additional improvement. These problems require thoroughgoing investigation and study and a summarization of experiences for smooth development.

Doing a good job of agricultural zoning, gaining an understanding of natural resources and socio-economic conditions everywhere through the country, zoning of agricultural areas, and giving tailored guidance are prerequisites for the development of agricultural production through the adaptation of general methods to local situations. This symposium emphasized discussion of some problems relating to agricultural economic surveys in agricultural zoning work. These included the goals and significance of agricultural economic surveys, the substance of research, and survey methods. Units on special topics also drafted "Elements of Agricultural Economic Survey and Study in County Level Agricultural Zoning," "Agricultural Economics Survey and Study Indicators and How to Figure Them," and a group of statistical charts, which were provided all jurisdictions for their reference. Everyone unanimously agreed that agricultural economics survey and study are major integral parts of agricultural zoning, and that the quality of agricultural zoning work is determined to a large extent by the depth of survey and study of agricultural economic conditions and socio-economic resources. County level agricultural zoning, in order to provide data for the formulation of agricultural development plans and for the guidance of agricultural production, should comprehensively and integratedly study natural, economic, and technical factors related to agricultural production as well as the laws of changes in them. At the present time, agricultural economics survey and study work is still a weak link in China's agricultural zoning, and one that is in need of strengthening. Comrades unanimously proposed: (1) Addition of an agricultural economics unit to the zoning office of the State Agricultural Commission, and a requirement that all echelons of agricultural organizations intensify their agricultural economics survey and study work, promptly reporting to leaders important events and problems; (2) Currently county level agricultural economics survey and study personnel are few in number and poor in quality. It is recommended that the State Agricultural Commission commission relevant institutions to conduct short training courses; (3) Organize and guide agricultural institutions and institutes to conduct rural surveys, and appropriately increase funds for agricultural economics surveys and study in order to assure smooth continuance of survey work.

The most important agricultural economics problem is solution to the problem of material benefits for peasants. As Engels said: The economic relationships in every society are revealed, first of all, in benefits. ("On Housing Problems,"

"Selected Works of Marx and Engels," Vol 2, p 537). Therefore, simultaneous with our understanding the rural situation, and coming to grips with agricultural zoning, we have to begin with costs and prices of farm products, and study various agricultural economics questions. Results of survey show: (1) For the past 20 years and more, farm product costs have generally risen. Expenditures for materials have multiplied; quantity of labor used and expenditures for human labor have increased to a fairly high degree; and costs have climbed. Survey results compiled for the four counties of Taoyuan in Hunan, Polo in Guangdong, Guanghan in Sichuan, and Jiading in Shanghai show that in a comparison of 1979 with 1965, costs per ton of paddy rice rose from 8.45 tc 11.40 yuan, an increase of 34.9 percent; for cotton from 81.97 to 108.47 yuan, a 32.3 percent increase; and for rape, a rise form 24.30 to 33.08 yuan, a 36.1 percent increase. (2) At the present time prices of farm products still tend to be low. According to experimental calculations made on cost survey data by seven units in the Price Administration (average figures for the 3 years, 1977, 1978, and 1979 for material costs and amount of labor being used; value of labor calculated at 1.39 yuan per day; and cost and profit rates calculated at 14.41 percent to 20 percent), the amount below calculated value of existing procurement list prices was: for six kinds of grain, lower by an average 19.68 - 23.41 percent. These included paddy rice, which was 24.09 to 28.39 percent lower, and wheat, which was 36.33 to 39.31 percent lower. Cotton was lower by 8.6 to 12.85 percent. Live hogs were 13.26 to 17.3 percent lower. (3) The comparative prices of industrial and agricultural products and comparative prices of farm goods internally were inequitable. Using the aforestated method of calculation, grain prices were 19.68 to 23.41 percent lower than value, but prices of industrial goods were 20 percent higher than value. In 1978, farmers sold 46 billion yuan worth of farm products and bought 81.04 billion worth of industrial products. As a result of the price scissors, the farmers had to provide the state an accumulated sum of about 30.26 billion yuan, or about one-third the national treasury's revenues. Consequently, the comrades proposed: (1) Efforts to increase scientific farming levels and administration and management levels to increase the labor productivity rate and reduce costs of farm products so that the magnitude of value per unit of product falls. (2) Under the guidance of the planned economy, and in conformance with the laws of value, to make equitable readjustments in farm product prices to further reduce the price scissors. Over the long range, there should be, principally through a lowering of the prices of industrial goods used in agriculture and a lowering of industrial retail prices, together with an increase in the prices of farm products as a supplementary program, gradual achievement of prices that are close to value overall. In order to achieve this objective, from the lowering of industrial costs as the fundamental action, prices of the means of agricultural production and industrial consumption items should be lowered. In the case of plastic sheeting used in agriculture, and in the case of pesticides on which profit margins are overly high, for instance, the market prices should be lowered. On items for which the profit margin is excessively low, such as farm machinery, if costs cannot be lowered for the time being, state subsidies might be resorted to, the ex-factory price remaining the same, but the sale price dropping appropriately. For individual farm products for which the prices are overly low, readjustments should be made. In places where the grain commodity rate is high and the unified procurement base figures are high, there should be suitable reduction in the unified procurement base figures and an increase in the ratio of excess price and negotiated procurement. There should be further reduction

in the difference between unified procurement prices and prices paid in excess of quota for grains and oil in a gradual transition to the excess procurement level. (3) The state should support agriculture through public finance, credit, and tax revenues, and through the use of rebates of industrial and industrial profits to increase agricultural income. (4) Reform of the price management system, giving locales and enterprises a certain jurisdiction over price fluctuations for second and third category agricultural by-products, changing the uniform list price to a multiple price system. Agricultural departments should have the right to participate in farm product price regulation and management. It was recommended that the price administration might annually, depending on the situation, meet with agriculture departments, commercial departments, economic theoreticians and farmer representatives to discuss procurement prices for farm products.

The farm products procurement system is one of the main vehicles for proper handling of relations between the state and farmers. Problems prevailing the farm products procurement system today are mostly the result of excessive state uniformity and over regulation, blocking of flow channels, seriously bureaucratic business practices, and overly high basic procurement figures for grain and economic crops in some areas, etc. Prevailing methods put farmers in a position of no authority, seriously dampening farmers' enthusiasm. Consequently, the comrades recommended: (1) Change in the prevailing unified procurement and requisition procurement methods, which rely primarily on administrative methods to get agricultural by-products, to a procurement contract system that mostly uses economic methods and is gradually built on a foundation of equality and mutual benefit and exchange at equal value. For the present, a procurement method that sets procurement base figures on a contract system may be adopted. Base figures can generally be based on average figures for the past 3 years and guaranteed not to change for 5 years. The setting of base figures or signing of contracts should be done in joint consultation with commercial departments and production departments, and documents signed should have the force of law. When they are violated, the violator should be responsible for the aggrieved parties economic losses. Negotiated procurement should be expanded in the gradual elimination of unified procurement and requisition procurement. (2) Opening of a larger number of commercial changes in a change away from the single dealer system. In actual practice, in today's China there are three economic components (the state, the collective, and the individual), so there should be three corresponding channels of flow. The Supply and Marketing Cooperative could be changed to the second State Ministry of Commerce, state farm and commerce, and commune and brigade collective commerce organizations being separately set up, clearly stipulating that they are all integral parts of socialist commerce, and that they should enjoy the same treatment in prices, tax revenues, award sales, and subsidies as state commerce. Strengthen rural market direction, and development of goods exchange by individual commune members for common advancement of prosperity in the rural economy.

How to adapt general methods to specific situations to establish an equitable agricultural production structure is a problem that has not been solved for a long time. On the basis of survey data, survey teams from 11 counties conducted a category by category comparison, noting that the main problems existing in the agricultural structure are one-sided emphasis on development of grain production,

disregard of concrete conditions, arbitrarily increasing multiple cropping indeces, elbowing aside economic crops, placing agriculture in a position of opposition to forestry, livestock raising, sideline occupations, and fisheries, ignoring diversification, and creating serious imbalances between use and nurture of land, the workforce and seasonality of work, the ecology and the environment. In addition to studying the problems of standards for making sensible China's agricultural structure, the symposium also focused on discussion of how properly to handle the problem of the relationship between grain and diversification. Comrades put forward the following several views: (1) Grain is the most important commodity, and its output must be increased year by year in order to assure the needs of the people's livelihood and development of the national economy. However, the error of sole emphasis on grain to the neglect of diversification has to be overcome, and while maintaining the ecological balance, equitable arrangements have to be made for agricultural, forestry, livestock raising, sideline occupation and fishery production. In different areas, different ratios should be set for the growing of grain and economic crops, accentuating strengths and playing down weaknesses to win bumper harvest. For example, Liaocheng Prefecture in Shandong Province appropriately expanded its cotton growing area in 1980 to win increased earnings, expanding its investment in grainfields to gain bumper harvests of both grain and cotton. (2) Emphasis must be placed on increasing per unit yields of grain crops. Everyone acknowledged that the lower the yields of an area, the greater the potential for increases, and they recommended increased support for low yield areas. (3) Need for further implementation of policies, and effectively solving the situation of "grow grain and suffer loss; the more grown the greater the loss." There can be a further readjustment of the comparative prices of grain and other crops, and suitable reductions in the uniform procurement quotas in high output grain areas. Both the state and localities can institute subsidies or offer award sales of low priced industrial goods for commodity grain. Profits from commune and brigade industries may be used for internal subsidization of grain production. So long as they assure fulfillment of state quotas, grain growing areas and economic crop growing areas should be permitted, of their own free will and for mutual benefit, and in the interest of exchanges of what one has for what one does not have, to sign contracts to exchange some goods. Everyone particularly noted that agriculture is the foundation of the national economy, and that national economic planning must be done on the basis of agricultural, light industry, and heavy industry priorities so that the national economy can develop rationally and harmoniously.

Relationships among the state, the collective, and individuals have to be correctly handled. A look at the relation between the state and the peasants shows that the main problem today is state withdrawal from agriculture of too much for accumulation, and too little funds given to support agriculture. The tax on agriculture is a general 3 to 7 percent, and it becomes less each year. Nevertheless, the peasants say, "Do not fear what is openly asked for; just fear what is taken by stealth." As stated above, as a result of the price scissors between industrial and agricultural products, the state annually takes about 30 billion yuan from the peasants for accumulation, or about eight times the agricultural tax. This amounts to one-third of national revenues. On the other hand the accumulated total of state support funds to agriculture between 1952 and 1977 was 140.7 billion yuan, or 10.7 percent of total state fiscal disbursements, and

an annual average of 4.2 billion yuan. A look at the distribution of earnings between the collective and the individual shows great accumulation and little consumption. In Wu County, Jiangxi Province, for example, the proportional distribution in 1965 was as follows: tax revenues 8 percent, collective accumulations 14 percent, commune member consumption 78 percent. By 1979, it was tax revenues 8.5 percent, collective accumulations 31.2 percent, and commune member consumption 60.3 percent for a 17.2 percent increase in collective accumulations and a 17.7 percent decline in commune member consumption. A fairly conspicuous problems in relationships among the three at present is the excessive burden borne by the peasants. A 1980 survey conducted in Jiading County showed 10 expenses of various kinds collected from the peasants totaling more than 8 million yuan, for a per capita average of more than 20 yuan. At the Yutian Commune in Taoyuan County, between 1976 and 1978, the county, or the district, or the commune, or the production brigades egalitarianly and indiscriminately used 63 different pretexts for taking 777,000 manhours of work from the production teams there, totaling 32 percent of the total amount of work done for a per capita burden of 42 yuan. The peasants said, "Nowadays the peasants burdens are like carrying rice straw on a rainy day; the longer carried, the heavier it gets." It is hoped that the Central Committee will make a check and strictly define which burdens are to be borne by the state and which are to be borne by the peasants instead of heaping burdens of various kinds on the heads of the peasants.

Integrated agricultural, industrial and commercial operations are a measure of strategic significance for China's economic development. China has a large population and a relatively small amount of useable land. Through sole reliance on the soil, the peasants will find it difficult to become prosperous. For the past several years at Malu Commune in Jiading County, Shanghai, grain yields have averaged 1,760 jin per mu annually, and cotton yields have averaged 105 jin per mu. However, of the average per capita distribution of 367 yuan in 1980, only 80 yuan derived from agriculture. Therefore, we must broaden the avenues of production and institute integrated agricultural, industrial, and commercial operations so as to be able to make the rural economy boom. Since the Third Plenary Session of the 11th Party Central Committee, China has test operated quite a few combined agricultural, industrial, and commercial enterprises. Practice has shown that they have played a great role in the rational organization of production, making arrangements for excess workforces in rural villages, and in raising funds for agricultural production. However, owing to contradictions in the present economic system, difficulties are very great. The comrades recommended: (1) The State Council might convene a national integrated agricultural, industrial, and commercial work conference, bringing in relevant units for participation to jointly formulate a document on integrated agricultural, industrial, and commercial operations, and to make some formulations on basic problems so everyone would have a guide to follow. (2) Establishment from the central to the local levels of leadership units for integrated agricultural, industrial, and commercial operations for coordination of the views of all sectors, and for unified leadership.

The modernization of agriculture is the overall goal of all agricultural economics work. China possesses abundant natural resources and a copious supply of labor; however, people are numerous relative to arable land; accumulated resources are scant; and scientific, technological, and cultural levels are backward. How to

proceed from the realities as they exist in China today to the building of a Chinese style modernized agriculture is a major problem requiring earnest study. Following discussion, everyone acknowledged: (1) The need to institute an equitable agricultural development strategy. There is a need to base ourselves on 1.5 billion mu of cultivated land and also to have a vision of 14.4 billion mu of land. Of China's present farmland, 23 percent is high yield fields, 44 percent are average fields, and 33 percent are low yield fields. If only we will rely on policies and rely on science, the potential for increased output from 1.5 billion mu is still very great. Furthermore, if we are able to sensibly use 14.4 billion mu of land, we can greatly increase China's agricultural by-products and hasten progress toward the modernization of agriculture. (2) Vigorous development of agriculture's commodity production is a key in hastening China's agricultural modernization. In 1980, the national commodity rate for agricultural products was 32.1 percent, the net commodity rate for grain being 13.7 percent. Through development of commodity production, it will be possible to hasten China's agricultural specialization, and socialization, promote economic accounting, and increase the labor productivity rate. (3) Arousal of the enthusiasm of scientists and technicians, hastening the training of scientists and technicians, and raising of the cultural and scientific and technical levels of the broad masses of peasants, and intensification of the work of promoting agricultural techniques. (4) Use of the system and of policies to assure all around development of agriculture, forestry, livestock raising, sideline occupations, and fisheries. On the one hand it is necessary to respect the self-determination of the peasants, and on the other hand the state has to give vigorous support with capital and materials. In the course of the discussions, some comrades suggested that agricultural mechanization and the bringing of all farmland under irrigation is still necessary, but that economic accounting has to be implemented and arrangements for these things done rationally on the basis of capabilities. As regards the influence on agricultural modernization of contracting for production with individual households and contracting jobs with individual households, some comrades believed that for the present, these will slow the mechanization of agriculture and water conservancy construction. However, "double contracting" has promoted development of agricultural production, so from a long range viewpoint, they will hasten agricultural mechanization and the bringing of all farmland under irrigation as well as accelerate the speed of agricultural modernization.

9432
CSO: 4007/78

NPC DEPUTIES SUPPORT TREE-PLANTING DRIVE

OW090745 Beijing XINHUA in English 0725 GMT 9 Dec 81

[Text] Beijing, December 9 (XINHUA)--Ma Shoushan, a 66-year-old forester of Hui Nationality, was especially elated at the proposal for a nationwide voluntary tree-planting drive made by the State Council to the National People's Congress.

Attending the current N.P.C. session as a deputy, he is director of a forest farm covering 460 hectares in the Ningxia Hui Autonomous Region, which has large desert areas. In the past 20 years, he has led his workers in planting 800,000 trees on a 7.5 kilometer section of sandy and pebbly bank of the Yellow River in the region. The tree-belts successfully protected farmland from floods this summer.

Ma Xin, (Hui Nationality), chairman of the regional people's government, is also a deputy. He told XINHUA that Ningxia should plant trees on 1.2 million hectares of barren hills and arid land. The forest cover of the region now stands at only 2.5 percent.

This year state and collective farms have afforested 20,000 hectares of land and people have planted 40 million trees in various places in the region, Ma Xin said.

"The proposed drive will give further impetus to afforestation in our region," he said.

Professor Wang Binsheng, president of Land Reclamation Academy of the Xinjiang Uygur Autonomous Region, said China had only 12.7 percent forest cover, which was far too low compared with other advanced countries in the world.

The agronomist has worked nearly 30 years in Xinjiang, which has the largest deserts in China. He said that since the beginning of land reclamation in Xinjiang in the 1950's, great attention had been given to planting trees to protect farmland, and nowadays shelterbelts crisscrossed 200 reclamation farms, protecting one million hectares of cropland.

CSO: 4020/50

BRIEFS

FUJIAN PREFECTURE LATE RICE--Fujian's Putian Prefecture reaped a bumper harvest of late rice crop. Per mu yield of its 990,000 mu reached 654 jin, an increase of 28 jin over that of last year. [OW121425 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 8 Dec 81]

JIANYANG PREFECTURE GRAIN--Fujian's Jianyang Prefecture reaped a bumper agricultural harvest this year despite natural disasters, with total grain output expected to exceed 2.58 billion jin, topping last year's figure by more than 100 million jin. The per-mu yield increased by more than 30 jin. Pucheng County reaped a good harvest from its more than 250,000 mu of single-cropping late rice, with total output increasing by nearly 20 percent. The per-mu yield from Shaowu County's 84,000 mu of single-cropping late rice reached 674 jin this year, up 38 percent. The total output from the prefecture's more than 2 million mu of double-cropping late rice increased by more than 50 million jin. By the end of October, the prefecture had procured 525 million jin of train, topping the same period last year by more than 30 million jin [OW131353 Fuzhou FUJIAN RIBAO in Chinese 28 Nov 81 p 1]

CSO: 4007/129

FARM DEVELOPMENT PROGRAM FOR HEILONGGANG REGION PROPOSED

Shijiazhuang HEBEI RIBAO in Chinese 2 Nov 81 p 2

[Article by Hou Xueyu [0186 1331 3558], Botony Institute, Chinese Academy of Sciences: "How to Make the Most of the Heilonggang Area's Natural Advantages for Rapid Development of Large Scale Agriculture"]

[Text] Editor's Note: In response to invitations from the Provincial CCP Committee, the Provincial Science Commission, and the Provincial Science and Technology Association, during late June and early July this year, Comrade Hou Xueyu, in the company of scientists and technicians from Hebei Province, made an inspection of more than 10 counties in Hengshui and Cangzhou prefectures. In this article, which he has written, he has provided for our further correct appreciation of the Heilonggang area's advantages scientific data and very good views for rapid development of large scale agriculture in this region through readjustment of the internal structure of agriculture, and reforming the farming system on the basis of natural laws and economic laws to play up strengths and play down weaknesses. The original article was fairly long, so this newspaper has abridged it for publication here.

Natural Advantages for Development of Large Scale Agriculture in the Heilonggang Region

In order to make the most of advantages, one must, first of all, understand those advantages. What are the natural advantages of the Heilonggang region for development of large scale agriculture?

An understanding of the region's natural advantages requires more than sweeping statements about whether the soil or climate are good or bad. One must relate such things to particular agricultural crops or economic trees. The same climate may be a good climate for certain plants and a bad climate for other plants. The same kind of soil may be thin for wheat or corn, but fertile for some other kind of plant. Similarly, we cannot sweepingly say that a given crop or a given variety is high yield or low yield. One must relate yields to specific conditions. The same kind of crops or varieties may be high yield crops or vaiieties under certain conditions, but change the conditions and they may become low crops or varieties.

Consequently, in evaluating the advantages and disadvantages, the strengths and the weaknesses of the Heilonggang region, one must use the aforestated dialectic conception as a basis. Only through the use of such a conception for analysis of a region's weather, soil, people, and crop strengths or weaknesses can one be able to build up strengths and play down weakeneses to make the most of advantages for rapid development of large scale agriculture.

(1) Disadvantagous Elements for Grain Production in the Heilonggang Region

The Heilonggang region has always been notorious for droughts, waterlogging, and alkalinity, and some of it is a sandy waste. In terms of the province as a whole, its grain yields per unit of area are relatively low, Annual rainfall in this region amounts to only between 500 and 600 millimeters, 70 percent of it being concentrated during the summer months of July and August. The spring and early summer seasons are ordinarily dry, but the region is prone to waterlogging during the summer season. Most waterlogging disasters occur in low-lying areas, while drought occurs principally in hilly regions. During April, this region frequently has hot dry winds, which impair the growth and development of wheat, or, more seriously, may lead to the death of the wheat. These are the disadvantageous climatic elements. The mother material in the soil of this region contains pumice and salts carried in from upstream, and when this mother material is close to the surface of the soil, it forms an aged saline-alkaline soil. In addition, because of the depressions in the terrain, the underground water table is fairly high. When spring drought and high winds are added to this condition, evaporation at the soil surface becomes great. The salt-bearing underground water moves upward through capillaries to the soil surface where a secondary saline crust may be formed.

In addition to the aforementioned effects of drought, waterlogging and salinity, there are other reasons also for the low grain yields in the Heilonggang region. As a result of the emphasis for the past 20 years or so on an increase in multiple cropping indices and the blind advocacy of two crops in a single year, one of wheat and one of corn, with continuous cropping rather than rotational cropping, the wheat growing area has been excessively large. The farming system incorporating use of the soil and nurture of the soil has been ignored, and pulses, peanuts, and cotton, as well as drought and waterlogging-resistant and saline-alkaline tolerant spring millet, and spring gaoliang have been squeezed out. Also squeezed out has been some early maturing crops that have a short growing season, are tolerant of drought, and require little fertilizer. As a result, a fair amount of soil fertility has been depleted, and as a result of almost half of the cultivated area receiving no organic fertilizer, but only chemical fertilizer, the soil has become hard and stiff. Because the fertilizer contains large amounts of nitrogen but lacks phosphate, the nitrogen cannot be used to full advantage. This is still another important reason for the low yields in this region.

(2) Natural Advantages for Development of Large Scale Agriculture in the Heilonggang Region

While analyzing the aforementioned disadvantageous elements, we should also look at this region's advantages in weather, soil, people, and crops.

(1) Seasons in Which Plenty of Water, Heat, and Light are Combined

The characteristics of such a climate are advantageous to the growth of numerous economic crops and fruit trees. This region is one of the country's principal areas for the growth of cotton, peanuts, and sugarbeets. In addition, the quality of watermelons and of deciduous tree and vine fruits such as red dates, grapes, peaches, and pears is especially good, because during the period of their vigorous growth, local temperatures are high, quantity of rainfall copious, sunlight ample, and the difference between daytime and nighttime temperatures great. Under daytime conditions of suitably high heat and strong sunlight, photosynthesis can be carried on to the full to produce carbohydrates. Evenings, when temperatures are relatively low, respiration relative weak, and consumption slight, great accumulation of sugar can take place. Furthemmore, during summer when a lot of rain falls during the growing season, many salts are washed out of the soil, reducing crop damage caused by salts.

Though autumn rains may sometimes cause flood disasters in this region, it is also a region favorable for the sowing of wheat. When rainfall comes only in August and October the first year, and in March the second year, a wheat harvest during the second year can be assured. The high temperatures, scant rainfall, and strong solar radiation at the time the wheat ripens are also advantageous for the formation of starches. Therefore, since ancient times this region has been a wheat growing area. These are the advantageous aspect of the climate. In addition, so long as fall harvested crops such as corn, soybeans, peanuts, cotton, sesame, and gaoliang are seeded in furrows and planted in trenches, are planted sufficiently late so as to avoid the worst of the dry season, even with the summer drought, high yields in the fall may be assured.

(2) Soil Advantages

The soil in this region is extremely complicated. The lianghe soil [0357 0678 0960] in hilly areas is suitable for the growing of wheat and corn, but large expanses of saline-alkaline soil and a certain amount of sandy soil are low yield areas for wheat and corn. However, the saline-alkaline soil in which grain crops grow poorly is, conversely, good soil for growing certain grasses and woody economic plants. Golden streaked small dates will grow normally in clay soils with a pH of 9.0 and a 0.3 to 0.4 percent salt content, and will produce bumber harvests consistently in both years of waterlogging and drought. For example, 2 out of 3 years are dry in Cangzhou Prefecture, yet the fluctuation in output of small dates is small. In 1963 a particularly large flood disaster occured, but the golden streaked small dates maintained output nevertheless. If 20 date trees per mu are planted, given only half care about 300 jin of dates can be produced for a value of 100 yuan. With better care, 500 jin can be produced. Furthermore, the trees have a long life, trees several hundred years old continuing to bear. The masses praise them as a "sure-fire high yield crop."

False indigo [Amorpha fruiticosa L] also grows quite well in the saline-alkaline soil of this region, even managing to grow in soil that is fairly saline and alkaline. It also perfoms a function in imp oving saline-alkaline soil. Chemical analysis shows that its leaves contain nitrogen, phosphate, and potash, which make them a very good green manure or cattle fodder. The stems and leaves of alfalfa flourish in saline-alkaline soil, and alfalfa covers the ground well, reducing evaporation from the soil. Its roots go deep, also playing a role in improving saline

soil. Furthermore, alfalfa is, in itself, a very good green manure and a cattle feed fairly rich in nutrients. Sunflowers tolerate salinity and tolerate drought when grown in saline-alkaline soil, producing yields of between 100 nad 200 jin per mu, several times more than wheat produces when grown on the same soil.

Hongjing [4767 5427] is a natural economic crops that grows on heavily saline-alkaline soil. Its stems can be woven into baskets, or used as a light industry raw material. Hongjing produces yields of from 600 to 1,000 jin per mu. Figuring a value of .05 yuan per jin, this amounts to from 30 to 50 yuan per mu, the income derived from between 250 and 400 jin of corn. Saline-alkaline soil is also suitalbe for growing perennial shadawang [3097 2092 2489] (diding [0966 0002)], biennial sweet clover and annual sesbania. These are all alkaline-tolerant superior pulse feeds and green manures that both improve the soil and can be rotationally cropped as grass and grain. Additionally, Sudan grass (hezi [0678 1311] can also be grown in saline-alkaline soil. Nutrients are very high in these aforementioned posture grasses, and provide a material foundation for development of a livestock industry in alkaline-saline regions. The aforementioned economic plants, however, do not grow well in the acidic red soils of the semi-tropical and tropical southern parts of China. In addition, some of the pasture grasses, green manures, and fruit trees such as sesbania, Sudan grass and red dates do not grow well in the saline-alkaline soils of China's northeast and the Nei Monggol Plain because temperatures there are insufficient. Therefore, as advantages of Heilonggang, these livestock fodders, green manures, and economic crops are inseparable from the saline-alkaline soil and climate there. Thus, saline-alkaline soils are low yield soils for corn and wheat, but are high yield soils for hongjing, golden streaked small dates, false indigo, and alfalfa.

This region has some sandy soil. Sandy soil is the basic soil for oil-bearing crops such as peanuts and soybeans, and it also produces boji [4684 4614] willows and white wax stems [bailatiao - 4101 5866 2742], raw materials for plaited items. The sandlands are also this region's forestry base, and are suited for afforestation particularly with grapes and date trees. Growing of watermelons is also appropriate. In the sandy soil, watermelons yield at a rate of between 6,000 and 7,000 jin per mu. If each jin is calculated at a value of .10 yuan, this means earnings of from 600 to 700 yuan per mu. This is an advantage. Were the sandy soil to be planted to wheat or corn, both water and fertilizer would drain away, and growth would be poor. In this region, there are many low-lying slots and the underground water table is high. There is much marshy soil. False indigo and sesbania are tolerant of waterlogging, and in some low-lying areas rushes, which have very high economic value, cnn be grown. Rushes may be used both as livestock fodder and as a raw material for plaiting mats.

(3) Traditional Mass Experiences

For a long time, the masses in the Heilonggang region have created diverse farming systems to use and nurture the soil. In the control of saline-alkaline soil, they have used drains and ditches and they have built terraced fields as ingenious means of planting to avoid salinity. To combat drought, they have sunk shallow wells for irrigation, have bred numerous drought resistant crop varieties, and have used seasonal planting arrangements to readjust the planting of crop varieties. In a situation in which virtually every year brings dry hot winds, they have built

forest networks around their fields. The masses in this region have also bred numerous superior varieties of economic plants, such as Cangzhou golden streaked small dates, ya [7700] pears in areac crisscrossed by rivers, Gucheng watermelons, Shenxian honey peaches, etc. The experiences and creations of these working people should be regarded as a treasure for the Heilonggang region.

Several Strategic Problems in Development of Large Scale Agriculture in the Heilonggang Region

(1) Adoption of a progrmm of Reduction in the Grain Growing Area, Intensive Farming, and Increasing Per Unit of Area Yields.

Development of large scale agriculuure by no means requires neglect of wheat and corn porduction. Not only should there be no relaxation in this production, it should be given more intense attention. The problem lies in how to give more attention. Formerly much emphasis was given to expansion of the grain growing area and increasing the multiple cropping index. Analysis of the Heilonggang region's soil and climatic conditions shows, however, that neither of these two roads can be traveled. Only adoption of a sensible crop pattern and intensive farming to increase per unit grain yields will do. This means an appropriate reduction in the grain growing area, devoting some low-lying fields to development of diversification in pulseses and pasture grasses, green manure and cotton as economic crops and for the growing of fruit trees and development of forestry, using limited water and manure on grain fields that produce high yields, thereby greatly increasing total grain output as well.

Why propose such a plan?

First because adaptation of general methods to local situations can make the most advantage of different soils. This regions's soil types are very complicated. There are both soils that are fairly well in terms of water and fertility, and large areas of saline-alkaline soil, low-lying soil, and sandy soil. Wheat and corn have fairly great requirements for water and fertility, and they will not tolerate salinity or alkalinity. If they are planted in saline-alkaline soil, yields will be less than 100 jin per mu. However, if saline-alkaline soils are used to grow sunflowers or gaoliang, both of which are crops fairly tolerant of salinity, fairly high yields and earnings may be obtained.

Second is use of barren land to develop economic diversification. Heilonggnng has large areas of saline-alkaline wastelands, as for example Xian County, where there is 150,000 mu of saline-alkaline land that will not grow crops. Haixing County also has 500,000 to 600,000 mu of grassy lowland and saline-alkaline wasteland. These wastelands are not suited to reclamation. In Gucheng County, for example, the hongjing has cut down on 20,000 mu of heavily saline-alkaline soil, wheat being planted instead. As a result the grain did not grow, and the former hongjing stalks, worth 30 to 50 yuan per mu, were lost as well. The Liying Production Brigade in Qing County has 5,000 mu of saline-alkaline wasteland on which it grows false indigo, getting more than 2,000 jin per mu of false indigo stalks. Yet when wheat and corn is grown, the harvest is less than the seeds originally planted.

Third is the possibility of avoiding natural drought and flood disasters for consistent grain output. In order to reduce the damage done to agricultural production

by drought and flood disasters, proper reduction in the wheat and corn growing area and establishment of consistently high yield fields that meet high standards is completely necessary. In low-lying areas, tall stalk gaoliang, which is both drought resistant and tolerant of waterlogging, may be planted. On saline-alkaline soil, dates and grain or false indigo and grain may be intercropped for a harvest no matter whether drought or waterlogging occurs. In order to beat both spring drought and early summer drought, a certain amount of autumn-harvested crops may be grown.

Four is possibilities for concentrating water and fertilizer use to increase benefits from water and fertilizer. Lack of water and fertility are the main reasons for the Heilonggong region's low yields. Were the grainfield area appropriately reduced, and some crops that are saving on water and fertilizer such as pulses, pasture grasses, green manure, sunflowers, and such economic crops being planted instead on the soil that is not suited to the growing of grain, the water and fertilizer saved thereby could be used on the main fields, benefits from water and fertilizer being greatly increased. A survey has shown that counties, communes, and brigades that have put such a program into effect have obtained remarkable results. In order to expand its grain growing area, for the past 25 years Qing Connty has engaged in large scale capital construction of farmland for an accumulated investment of 140 million yuan and several hundred million man days of labor. It also increased applications of chemical fertilizer and promoted superior plant varieties. Nevertheless, per unit grain yields throughout the county never averaged more than 200 jin per mu, and the county's total output did not exceed 200 million jin. However they accumulated a debt for a total of 200 million jin of grain bought from the state at uniform prices for consumption their amounting to 38.66 million yuan. In order to turn around this situation of wide planting and thin harvests, the County CCP Committee reduced the grain growing area, promoted the "three field farming system," using one-third of the grainfields that had been widely planted only to yield thin harvests to set up consistently high yield grain fields through concentration of fertilizer water, and manpower on them. Another third of the area was used to grow peanuts, sunflowers, sesame, watermelons, and such economic crops, and on the final third the growing of wheat was rotated with the growing of green manure for a combination of use and nurture of the land. Though grainfield area in the county in 1979 was 80,000 mu less than in 1976, yields per unit of area increased by 114 jin. Total grain output increased by 68,810,000 jin, and income from industrial sideline occupations and economic diversification increased more than threefold. In 1971, Jiangqian Brigade in Jing County grew grain crops on an area of 1,200 mu for yields of less than 100 jin per mu. Each year they consumed 20,000 jin of grain purchased from the state at a uniform price. After 1971, they cut back the grain growing area to 600 mu, doing intensive farming, providing meticulous care, and expanding the growing of alfalfa to 700 mu, and by 1979 grain yields amounted to 800 jin per mu, and total output was 560,000 jin, a five to six fold increase over the time when they planted widely for thin harvests. Each household provided the state an average 4,166 jin of grain, and alfalfa worth about 10,000 yuan was sold each year. Along with development of economc diversification, peasant income increased, or conversely could be used to promote increased grain production.

9432
CSO: 4007/100

BUMPER COTTON, GRAIN HARVESTS IN WUQIAO COUNTY REPORTED

Shijiazhuang HEBEI RIBAO in Chinese 28 Oct 81 p 1

[Article: "Great Bumper Cotton Harvest in Wuqiao Overfulfills State Purchase Quotas. "Double Contracting" System of Responsibility Shows Its Might; Readjustment of Pattern of Agriculture Yields Great Fruits. Total Cotton Output Predicted at 16 Million Jin for a 30 Percent Increase Over Last Year. Despite Reduction in Grain Growing Area, Total Output Increases. Large Numbers of "Excelling Households" Providing 1,000 Jin of Cotton or 5,000 Jin of Grain in Excess of Quota Emerge"]

[Excerpts] This year Wuqiao County, which instituted a "double contracting " system of responsibility, had a great bumper harvest. As of 26 October, the province's commune members had sold to the state 6.6 million jin of ginned cotton, overfulfilling state procurement quotas. Cotton picking and sales to the state are still at a high level in all communes and brigades. As soon as dawn breaks, long lines form, people throng, and a bustle of activity takes place in front of all cotton purchasing depots and stations. In the course of a day, between 30 and 40 thousand jin of cotton are purchased. County departments concerned predict a total output value for cotton this year of 16 million jin, a 30 percent increase over last year.

This year Wuqiao County made further sensible readjustment of its agricultural patterns, the grain growing area being reduced by 40,000 mu from last year. Cotton growing quota was set at 160,000 mu, but, in fact, each commune and brigade planted a little more than this. Because commune members prospered as a result of last year's bumper cotton harvest, investment in the land increased. In consequence, per unit grain yields this year showed general increase, and total grain output for the year is expected to be 14 percent higher than last, for a double bumper harvest in both cotton and grain. Communes and brigades have already substantially fulfilled the county's 13 million jin state grain procurement quota.

The double bumper harvest in cotton and grain demonstrates the tremendous might of systems of responsibility for production. All of the 1,271 production teams in this county instituted systems of responsibility of contracting production with individual households and contracting jobs with individual households and contracting jobs with individual households this year. Suddenly cotton changed from being the "stepchild" it was during the former period of eating out of a "large common pot" to a "born child." Once the lunar new year had passed, commune members went to the fields for which they were responsible to rake and roll to preserve moisture.

Where seedlings had not come up in a full stand, they checked row by row, replacing them. When no rainfall fell, irrigation was promptly done to add moisture to the soil. Between the time of planting and harvesting, hoeing was done 6 or 7 times, or as much as more than 10 times, and insect pests were also promptly controlled. This year the wheat was planted quickly, and the cotton was also picked on time. In the cotton fields there was no "dropped cotton," or "eyelashes" [4190 4208 3029]. In the cotton sold to the state, impurities were few and quality was high.

The great bumper cotton harvest further strengthened the collective economy and increased commune member earnings. From cotton alone, the county realized increased earnings of more than 8 million yuan, an average of 40 yuan per person. From last year's average per capita income of 115.50 yuan for the county, this year's income may rise to more than 160 yuan. In every commune and brigade has emerged a large number of units that have made double contributions in cotton and grain, and "excelling households," that have sold 5,000 jin of grain or 1,000 jin of ginned cotton in excess of quota. Ginned cotton sold by the Fantun Commune amounted to 79 jin per mu, and per capita earnings may climb from last year's 184 yuan to 250 yuan.

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SUCCESS REPORTED IN EXPERIMENTS ON MAXIMUM BEARING TIME FOR FRUIT TREES

Beijing GUANGMING RIBAO in Chinese 10 Nov 81 p 2

[Article by correspondent Chen Yichao [7115 0001 6389]: "Changli Fruit Tree Institute in Hebei Province Combines Production and Research To Make Contribution To Advance of Province's Fruit Output"]

[Excerpts] The Changli Fruit Tree Research Institute of the Hebei Provincial Academy of Forestry Science has achieved heartening results in efforts directed against problems in fruit tree production, undertaking experimental research at research bases set up in ya [1700] pear, apple, Chinese chestnut, date, and walnut growing areas. From the more than 4.8 million mu of fruit trees in the province, total output last year amounted to more than 1.68 billion jin, 12 times the output of the period immediately following Liberation. From 1.06 million mu of apples trees, output totaled 350 million jin, taking fourth place in the country. From 840,000 mu of pear trees, output totaled more than 700 million jin, first place in the country. This year production conditions in fruit producing areas are very good, and an increase in output over last year is in prospect. The Changli Fruit Tree Institute made a contribution in increasing the quantity and quality of fruit production in the province.

Hebei Province has more than 30 million apple trees of which more than 70 percent are young trees less than 10 years old. They bear fruit late; yields are low; and the masses derive benefit only slowly. In 1976, this institute sent scientists and technicians to set up a research site at the Xiaosuozhuang Production Brigade in Chapeng Commune, Funing County, where they launched scientific research on early bearing and early bumper yields from young trees. This production brigade once had more than 5,000 young apple trees, but the masses cut down more than 1,000 of them because they did not bear fruit. They selected more than 600 9-year-old trees from the remaining 4,000, applying multiple care techniques to them, and getting bumper harvests every year. This year output totaled more than 250,000 jin, a 24-fold increase over 1976 for yields averaging more than 7,600 jin per mu. To the newly close planted 6-year-old bumper harvest orchard, scientific care measures were also applied, and last year yields averaged 2,500 jin per mu, advancing the onset of heavy fruit harvests of the past by 7 to 10 years. This year, the brigade's fruit output will total more than 800,000 jin. The Xiaosuozhuang Production Brigade has become an advanced unit in the province, the prefecture, and the county.

In addition the research sites for Chinese chestnuts, small dates, and for the prevention and control of a disease of dates that causes uncontrolled growth, and rust diseases in fruits in Qianxi, Xianxian, Chengde, and Yutian counties have also won accomplishments during the past few years.

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CSO: 4007/98

BRIEFS

COUNTY FIELD MANAGEMENT--By the end of November, Jiangsu's Wujiang County had topdressed more than 49,000 mu of its more than 300,000 mu of wheat, barley and naked barley. It has preserved soil moisture on more than 20,000 mu and prevented aphid damage on more than 45,000 mu. [OW131353 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 8 Dec 81]

JIANGSU PREFECTURE AGRICULTURE--Jiangsu's Yancheng Prefecture has reaped a bumper agricultural harvest this year, with total output of grain, cotton and oil-bearing crops topping the previous peaks. Grain output has exceeded 5.15 billion jin, up 150 million jin compared with last year's output. The amount of cotton procured topped the previous peak by 300,000 dan. In Sheyang County, grain and cotton output topped last year's figures by more than 10 percent and more than 50 percent respectively. [OW131353 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 8 Dec 81]

JIANGSU COUNTRY AGRICULTURE--Jiangsu' Suqian County has reaped a bumper agricultural harvest with grain output exceeding 170 million jin, topping last year's figure by more than 10 million jin. Income from agriculture and sideline production has reached 140 million yuan, topping last year's figure by 17.5 percent. This year the county increased acreage of cotton, rape, peanuts, mulberry and other cash crops by more than 250,000 mu. [OW121252 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 9 Dec 81]

CSO: 4007/129

INSTITUTE OF ANIMAL HUSBANDRY SUCCESSES, ONGOING PROJECTS DESCRIBED

Shanghai KEXUE ZHONGTIAN [SCIENTIFIC FARMING] in Chinese No 9, Sep 81 pp 28, 25

[Article by Wang Ruilin [3769 3843 2651]: "Institute of Animal Husbandry, Chinese Academy of Sciences"]

[Excerpts] The Institute of Animal Husbandry of the Chinese Academy of Sciences is located at Malianwa, Haidian District, Beijing. It is a national animal husbandry research institution. This institute is concerned primarily with applied techniques in the study of livestock. In view of the key scientific and technical problems urgently in need of solution for development of the national economy and for livestock industry porduction, the institute has launched thoroughgoing and fairly long range, strongly theoretical research. It has accepted major research tasks handed down by the state, organized national cooperation on matters pertaining to the institute's research, and has undertaken academic exchanges both inside and outside the country to train animal husbandry scientists and technicians and has steadily provided new techniques, new theories and new accomplishments applicable to animal husbandry to promote development of China's livestock industry.

The institute was founded in 1957, transferred to the countryside in 1970, and restored and reconstituted at its original location in 1979.

The institute has eight research offices for livestock and poultry varieties, feeds and fodders, livestock and poultry nutrition, livestock reproduction, livestock genetics, raising of cows, raising of hogs, and raising of chickens. Scientists and technicians currently number 120, more than 70 percent of them being mainstay research cadres. There are more than 10 senior researchers, and research students in the three specialities of livestock and poultry nutrition, livestock propagation, and livestock genetics and breeding.

Prinicpal research accomplishments during recent years have been:

1. Comprehensive scientific and technical research on collective hog raising using mixed feeds, "limited" feeding of sows during their gestation period, developing economic hybridization, institution of weaning of shoats, breeding in the same stys, and fattening of burcher hogs in " a continuous process," which has remarkable increased the slaughter rate and economic benefits. The institute was honored with a National Science Conference award in 1978.

2. A book titled, "Hog and Chicken Feed Ingredients and Nutritional Value Tables," systematically gathers together both domestic and foreign experimental data on feeds and on hog and chicken digestive metabolism. Using mathematical statistics a preliminary evaluation was made of hog digestive abilities and protein digestion, and chicken metabolistic capability norms. After checking and sifting of the final manuscript by a specialized coordination team, this data was published. The tables provide scientific data on the formation of nutritional standards, and for scientific compounding of full value feeds for China's hogs, the institute receiving a citation second class for technical advancement from the Ministry of Agriculture for this work in 1979.

3. In 1980, transplantation of frozen sheep embryos was successfully carried out. This was a major breakthrough in livestock breeding, and in propagation techniques and low temperature biological research for China; it filled a deficiency for China.

4. In the field of research on improving the conception rate in sheep from frozen semen, the conception rate over a 3 year period has increased to more than 50 percent and an expansion of experiments is currently underway.

5. Research on the trace element content of livestock and poultry feeds and their organic effect on livestock and poultry have progressed very rapidly. A survey of feeds in Qinghai Province and the selenium content of pasture grasses there has been completed, and a distribution map for the entire province has been produced.

Work currently in progress includes: Survey of livestock and poultry varieties, and research on characteristics of germ plasm; introduction to cultivation and use of pasture grass fodder crops; quantity of nutrition required by hogs and chickens, and evaluation of values of feeds; research on trace elements in feeds; hybrid combinations to increase sow fecundity and lean meat commodity hogs; research on bull selection methods; preservation and transplantation of frozen embryos of cattle and sheep, and increasing the conception rate from frozen semen for sheep.

9432
CSO: 4007/96

BRIEFS

HESHUN COUNTY FALL SOWING--Faced with a new situation and new problems in fall farming following implementation of systems of responsibility, the Heshun CCP Committee strengthened leadership and took tailored action so that this year's fall farming would be done both quickly and well. As of the end of October, more than 196,900 mu amounting to 75.4 percent of the total cultivated land, had been cultivated. The remaining more than 6,400 mu of land not yet cultivated is being cultivated at a daily rate of about 10,000 mu per day, and will be entirely finished before 7 November. In early October, the county CCP committee transferred and organized 334 cadres from the county and commune level to go into the rural front line to take control over both fall harvesting and fall cultivation. County party and government leadership cadres contracted with communes; commune cadres contracted tracts; county and commune cadres in the countryside contracted with brigades, and brigade cadres contracted machines, draft animals, and implements, setting quotas, individual responsibilities, and time limits for completion. Ninety-five percent of the draft animals and tools in the county, and 86 percent of the tractors were put into autumn cultivation. Most communes and brigades instituted systems of responsibility for fall planting, receiving rewards for completion and sustaining penalties for failure of completion. Tractors were passed from one person to another without stopping for a great acceleration in the pace of machine cultivation. Brigades in communes that had promptly organized completion of all cultivation transferred machines and implements and draft animals to brigades in which duties were heavy to help with fall cultivation, receiving remuneration for it. As a result of use of the aforementioned measures, the pace of autumn cultivation throughout the county was greatly accelerated. [Excerpts] [Taiyuan SHANXI RIBAO in Chinese 1 Nov 81 p 1] 9432

DOUBLING OF SUGARBEET OUTPUT--As a result of the implementation of systems of responsibility for production and various other economic policies pertaining to the procurement of sugarbeets, and institution of joint plant-commune operations, it is estimated that total output of sugarbeets in the province this year may reach 170,000 tons, more than double last year's amount and a 30 percent increase over the all time high record year of 1969. This will provide the province's sugar refineries with ample raw materials. The Datong Sugar Refinery, which every year for the past 20 years has not had sufficient raw materials, will purchase 140,000 tons of sugarbeets this year. This is substantially sufficient to satisfy production needs. Right now, the refinery is urgently engaged in preparatory work prior to starting up the machinery. Machinery start-up will be 10 days earlier than last year. In order to assure smooth production at the Datong Sugar Refinery, the Datong Thermal Electric Power Plant, the water compant and railroad and highwary transportation units and departments are also actively coordinating their vigorous support. [Text] [Taiyuan SHANXI RIBAO in Chinese 2 Nov 81 p 1] 9432

CSO: 4007/98

BRIEFS

HECHUAN COUNTRY GRAIN PRODUCTION--Although Hechuan County suffered an unexpected and exceptionally large flood, its grain production this year increased as usual enabling it to have a bumper crop for the fifth running year. According to the statistics of the county statistical bureau, the total grain output for the county is 3.2 percent greater than last year. An exceptionally devastating flood which may occur once in a hundred years hit Hechuan County for a 10-day period in mid-July and inundated 160,000 mu of farmland. After this disaster the county, on the foundation of implementing various forms of production responsibility systems such as assigning output quotas to individual able-bodied laborers, fixing output quotas based on households and having peasant households assume full responsibility for task completion, further relaxed restrictive policies. Furthermore, the masses gave enthusiastic support and production increased vigorously. The autumn sowing was quickly and successfully accomplished. Throughout the county at every level the party, government organizations and a vast number of cadres provided for and helped organizations by engaging in production. It was the inhabitants of the disaster region who suffered through the difficulty together and struggled shoulder to shoulder to accomplish a great part of the hard and arduous work. [Excerpt] [Chengdu SICHUAN RIBAO in Chinese 7 Nov 81 p 1]

CSO: 4007/125

INCREASED PROCUREMENT OF THIRD QUALITY FARM PRODUCTS URGED

Kunming YUNNAN RIBAO in Chinese 23 Oct 81 p 1

[Article: "Enhance Procurement of Third Grade Agricultural Byproducts"]

[Text] The year conditions for grain production and economic diversifiaction are very good throughout the province. A new situation has also emerged in procurement of agricultural byproducts. The pace of procurement quickens with each passing month; a tremendous increase has taken place over the same period last year in monetary value of procurement; and some prefectures and a group of counties have already overfulfilled agricultural byproduct procurement plans for the whole year. However, in the procurement of agricultural byproducts, a decrease has occurred in purchases of third grade products. In some prefectures, a decline on varieties procured amounting to 30 or 40 percent as compared with last year has taken place. Monetary value of procurement of third grade products has declined by more than 10 million yuan throughout the province. If total value of tobacco leaf procurement is eliminated, the total value of other products procured has declined by 2.03 percent as compared with the same period last year. If procurement price rises for some varieties are also eliminated, the monetary value of third grade goods procurement will have declined even more. This problem merits serious attention by all jurisdictions. Leadership should be strengthened and cadres should be sent into fairly weak areas and units to help with work there to reverse with all possible speed the situation of a decline in procurement of third grade agricultural byproducts

Third grade agricultural byproducts are in important part of national wealth. Numerous industrial raw materials, export goods and non-staple foods derive from third grade agricultural byproducts. Inasmuch as both third grade agricultural byproducts and "minor fall harvest" products are very seasonal, unless their collection and procurement is promptly organized, losses that cannot be readily made up will result. Therefore, organization of third grade agricultural byproduct procurement is an extremely important current task for supply and marketing cooperatives at all levels. One of the major reasons for the decline in procurement of third grade agricultural byproducts is the pursuit of increased amounts of money and more prizes on the part of some areas and enterprises. As a result, leaders, and staff and workers at all echelons of supply and marketing cooperatives must adhere to socialist orientation, correct their thoughts about doing business, and follow the principles of making overall plans with consideration being given to all factors and making all around arrangements, giving attention both to staple

products and not relaxing on procurement of third grade minor products. In order to encourage enthusiasm in enterprises and among staff and employees for dealing in third grade agricultural byproducts, at the time when each jurisdiction institutes a system of economic responsibility, kinds and quantities of third category products to be procured should be specifically stipulated, and quantities procured should be linked to monetary rewards. The extent of rewards can be somewhat large, but those who ignore third grade minor products procurement or fail to fulfill prescribed varieties or amounts, must be economically penalized. At the same time, supply and marketing cooperatives everywhere must begin at once to diligently analyze dealings in third grade agricultural by-products, checking how many varities were handled in the past, the amount of precent decline, the reasons therefore and what actions should be urgently taken. All products produced by the peasants that are needed in the market and that also meet specified quality requirements should be procured. In cases where the market for certain items is temporarily sluggish, caution should be exercised and a suitable amount accumulated, all levels of companies performing the function of a storage battery. Vigorous attention must be given to sales work, using sales to promote procurement. For some products, processing will be required to make them useful for new purposes. In short, one should not take the mistaken action of halting procurement.

9432
CSO: 4007/99

INS, OUTS OF WHEAT GROWING IN YUNNAN SURVEYED

Kunming YUNNAN RIBAO in Chinese 28 Oct 81 p 3

[Article by He Zhaoxing [0735 0340 5281]: "Yunnan Wheat"]

[Text] In Yunnan with its "three dimensional climate," wheat is grown from more than 3,000 meters above sea level to around only 300 meters above sea level. Wheat's broad distribution and strong adaptability are qualities numerous grain crops do not have. Wheat is one of the most ancient grain crops, and research on its classification system is also fairly complete. In terms of form characteristics, no less than 20 varieties in the world have been named, but the ones for which cultivation is most widespread and which possess most wideranging significance in production are common wheat and durham wheat. Second comes club wheat and poulard wheat. It has been ascertained that China grows six varieties of wheat, common wheat being the preponderant one and accounting for more than 96 percent of the wheat grown. Study and observations shows the wheat grown in Yunnan to be the four "cousins", common wheat, poulard wheat, club wheat, and durham wheat, common wheat accounting for 85 percent, club wheat accounting for about 8 percent, poulard wheat accounting for about 7 percent, and durham wheat amounting to an extremely small amount of the wheat grown. Very clearly common wheat plays a leading role in Yunnan's wheat production, and China's unique "Yunnan wheat subspecies" make Yunnan's numerous regional wheat varieties even more varied, a matter of major significance for research into the propagation, the origins, the evolution, and the classification of wheat. As a result of long term natural selection and selection by man of the abundant and diverse local varieties that correspond to "weather that differs every 10 li" in Yunnan, these local varieties are suited to planting under numerous and varied production conditions. Their resistances are strong, their resistance to drought and cold particularly so; quality is also good, and they are a valuable material for the breeding of superior wheat varieties that produce high yields, are of superior quality, ripen early, and are resistant to diseases.

Wheat is Yunnan's major winter crop. In area sown and total output, it holds third place among the province's grain crops after rice and corn. Its speed of development since liberation has been much greater than that of either rice or corn, and the area sown has more than doubled, total output more than tripling. A group of communes having yields of 600 jin per mu, brigades having yields of 700 jin per mu, production teams having 800 jin per mu, and bumper yield plots having more than 1,000 jin per mu have emerged.

Nevertheless, in terms of the province as a whole, low yields per unit of area are a common problem in Yunnan's wheat production. This is particularly so for dryland wheat, which occupies more than 60 percent of the wheat growing area. The difference in per unit yields from one area to another is also very great. In 1979, somewhat more than 80,000 mu in Dali County produced yields averaging 511 jin per unit of area, while average yields per unit of area for the province as a whole have never broken 200 jin. Very clearly, Yunnan's potential for increased wheat yields is great. Scientists point out that in addition to the disadvantageous conditions of serious winter and spring dryness, slapdash cultivation and care are major reasons for low wheat yields per unit of area. Consequently while continuing adaptation of general methods to local situations in the breeding and spread of superior varieties, expansion of the irrigated area, earnest attention to various intensive farming methods, vigorous extension of high yield farming techniques, and efforts in scientific planting and care of wheat will certainly change the situation of low wheat yields per unit of area.

9432
CSO: 4007/99

BRIEFS

FARM PRODUCT PURCHASE INCREASES--As of the end of September, purchases of agricultural byproducts by Yunnan Province's supply and marketing system totaled 358 million yuan for a 44.3 percent increase over the same period last year. More than 155 million yuan of this total was purchsed during September for an all time record for that month. The continued increase in September purchases is attributed primarily to the advantageous conditions for agricultural byproduct procurement created by bumper harvests. Production of flue cured tobacco, wood fungus, soap fats, castor beans, and black pepper have overfulfilled annual plan. Fairly substantial increases have also taken place in quantities purchased of dry chilli peppers, industrial greases, walnuts, bamboo shoots, raw lacquer, and coire fiber. As of the end of September, Qujing and Yuqi prefectures and the 22 counties of Funing, Yongshan, Guangnan, Xiaguan, Mouding, Luliang, Xiangyun, Yuqi, Xinping, Yaoan, Yongren, Yiliang, Lu'nan, Luoping, Lufeng, Jiangchuan, Chengjiang, Tonghai, Huaning, Shizong, Chongming, and Midu had fulfilled agricultural byproduct procurement plans for the whole year. [Text] [Kunming YUNNAN RIBAO in Chinese 23 Oct 81 p 1] 9432

CSO: 4007/99

GREATER EMPHASIS ON OCEAN FISH, SHRIMP HATCHING URGED

Hangzhou ZHEJIANG RIBAO in Chinese 27 Oct 81 p 1

[Article: "Strive for Appreciable Development in Ocean Hatcheries Within 3 to 5 Years. Strengthen Leadership to Put Development of Ocean Hatcheries in an Extremely Important Position. Provincial Ocean Hatcheries Conference Calls Upon All Echelons of Party and Government in Coastal Areas to Make Solid Achievements"]

[Excerpts] Bright prospects exist for development of ocean hatcheries in Zhejiang Province, and there is need to continue to give them strict attention to produce greater achievements. This is a requirement that the recently convened Provincial Ocean Hatcheries Conference put forward for all jurisdictions. The conference acknowledged that his year's implementation by communes and brigades in coastal areas of the province of a program of "a combination of catching fish and raising fish, with the emphasis on the fishing industry, in diversification for all around development" has brought new expansion in ocean hatchery production. The ocean hatchery area in the province amounts to more than 633,000 mu, an increase over last year of more than 60 percent. Output of ocean fish hatcheries during the first half of the year was 351,000 dan, a 20 percent increase over the same period last year. However, looked at in terms of aquatic products output for the entire province, ocean hatchery production remains a weak link, both output and output value occupying a very small proportion of the ocean fishing industry. Throughout the province, about 90 percent of ocean shallows where fish hatching could be done has not been put to use, and the potential for development of ocean hatching is still very great. In order to bring about a substantial increase in ocean hatchery production during the next 3 to 5 years, the conference called upon all jurisdictions to further increase their understanding of the importance of developing ocean fish hatching. Under present circumstances in which capabilities to catch ocean fish greatly exceed the amount of ocean resources available, development of ocean hatcheries is the major way to increase aquatic products, and it is also a major component in the development of diversification by coastal fishing and farming villages. All echelons of CCP committees and government must effect a substantial change in their guiding thoughts about development of the ocean fishing, they must place ocean hatching in an extremely important position. The principal hatching prefecture and country governments, and aquatic products administrative attention to hatching, and the major communes should also have someone undertake this responsibility.

The conference acknowledged that on the issue of product sales, the former stifling uniformity would have to be changed. Except for prawns, fish hatchery output consists of three kinds of products. By not instituting requisition procurement, but rather instituting only negotiated procurement and negotiated marketing, production units can handle matters themselves, effecting direct contact for sales of product. For products that producing units experience difficulties in handling by themselves, aquatic product supply and marketing units at all echelons should, in a spirit of support to hatchery production, actively help clear marketing channels, organize direct contact between producers and marketers, and arrange for people to transport, market and process. Inasmuch as hatchery products are mostly fresh products, the masses should be stimulated to start up various kinds of processing to preserve freshness, making full use of existing cold storage plant potential, and doing more packing in small containers of products for cold storage. For kelp and laver, close coordination should be effected between scientific and technical forces and producing units for processing and multiple uses. All units concerned should help solve problems in cold storage vehicles and cold storage boats in an enhancement of storage and transportation of hatchery products to satisfy market supply. Fry are the foundation for development of hatchery production, and Zhejiang Province currently has a severe shortage of fry, which impairs development of ocean hatching. All places should use a combination of natural propagation and artificial propagation of fry in an effort to use every possible means to solve the problem. All echelons of aquatic product research units should make the spread of technology an important task. All sorts of training classes should be operated to increase the specialized knowledge and technical competence of hatchery personnel, making ready for a training of all hatchery technical main stay cadres once during the next year or two.

9432
CSO: 4007/96

BRIEFS

DEVELOPMENT OF FOODSTUFF INDUSTRY--Commune and brigade foodstuff industries in Zhejiang Province have focused on development of four major categories of products namely, tea processing, sugar refining, beverages and dried fruits, vegetables, pastries, aquatic products, meats, dairy products, processing of edible fungi, and brewing. They intend that by 1985 commune and brigade foodstuff industry total output value will be more than double this year's. In order to realize this development plan, they have called upon communes and brigades in all jurisdictions to give attention to production of various kinds of products. While assuring fulfillment of state quotas, they are to give attention to planting, raising and processing as a coordinated process, and to production, supply, and marketing as a coordinated process so that the processing industries will be founded on a firm foundation of raw materials, and on a foundation of smoothly operating marketing channels. At the same time, it is necessary to vigorously launch coordination among cities inside and outside the province, communes and brigades, and commune member households, and strive to increase output of popular food products, of nutritious foodstuffs, and of traditional foods of various kinds needed by the people in cities and the countryside. This plan was put forward at the recent Provincial Commune and Brigade Food Industry Conference held under the auspices of the Provincial Commune and Brigade Enterprises Bureau at Jinhua. [Text] [Hangzhou ZHEJIANG RIBAO in Chinese 2 Nov 81 p 1] 9432

AGRICULTURAL BANK LOANS--In accordance with the program of national economic readjurtment, the Bank of Agriculture and credit cooperatives at all levels in the province have issued a total of 890 million yuan in loans during the first three quarters of this year to support commune and brigade enterprises increase their output of consumption goods for daily use. Throughout the year, Bank of Agriculture and credit cooperative cadres from everywhere have gone into commune and brigade enterprises to inspect and study. They ranked more than 20,000 enterprises, after which they acted on the basis of a program of supporting the best, giving active loan support to those enterprises having a source of raw materials, assured energy sources, and markets for their goods, to increase consumption goods for daily use needed by markets and in the daily lives of the people. Between January and September, the Bank of Agriculture and credit cooperatives in Shaoxing City issued an accumulated total of 61.58 million yuan in loans to commune and brigade light and textile industries, more than double the sum for the same period last year, to promote expansion of commune and brigade light and textile industries. As of the end of September, the output value of light and textile industries in that city amounted to 254, 950,000 yuan, or 81 percent of total output value. By way of support for development of commune and brigade enterprises in

Taizhou, Lishui, and Jinhua prefectures during the first three quarters of this year, the Bank of Agriculture and credit cooperatives issued a total of 240 million yuan in loans in these prefectures to support the development through the adaptation of general methods to local situations of the farming industry, the hatching industry, processing industries for agricultural byproducts, and the building materials industry. [Text] [Hangzhou ZHEJIANG RIBAO in Chinese 18 Oct 81 p 1] 9432

CSO: 4007/96

TABLE OF CONTENTS OF 'ZHONGGUO XUMU ZAZHI' NO 4, 1981

Tianjin ZHONGGUO XUMU ZAZHI [CHINESE JOURNAL OF ANIMAL SCIENCE] in Chinese No 4, 5 Oct 81 inside back cover

[Text] Study on the Relationship between β-Lactoglobulin Polymorphism and the Productive Performance of the Cow..... Qin Zhirui [4440 1807 6904] and Bai Hong [4101 5725], both of the Heilongjiang Institute of Animal Husbandry (1)

The Application of Remote Sensing on Grassland Resource Survey.....Jia Shenxiu [6328 1957 0208], Xia Jingxin [1115 2529 2450], both of the Department of Animal Husbandry, Beijing Agricultural University; Chen Moxun [7115 6206 6104], Grasslands Institute, Chinese Academy of Agricultural Sciences (2)

The Application of Cross-over Design in Animal Production Experiments.....Yu Weijiang [0205 6182 3068], He Yushu [6320 3768 2579], both of the Guizhou Agricultural College; Cui Yuzhen [1508 3768 3791], Tarim Agricultural Reclamation University, Xinjiang (7)

Study on Utilization of Heterosis by Using Erhualian Sow as the Basic Parental Generation.....Zhang Shunhe, et al. (9)

The Development of the Body and the Digestive Organs of Peking Ducks under Different Feeding Levels.....Wang Zhusan [3769 2691 0005], Liu Minxiong [0491 2404 7160] and Li Kunying [2621 3824 3841], all of the Department of Veterinary Medicine, Beijing Agricultural University (11)

The Relation between the Inseminating Time of the Mare and the Sex of Its Pony.....Qi Yixin [7871 5030 0207], Animal Husbandry and Veterinary Medicine Research Institute, Shandong Academy of Agricultural Sciences (12)

Study on the Conception Rate of Sheep with Deep Frozen Semen .....Wang Liming [3769 4539 6900], Zeng Peijian [2582 1014 1017] and Feng Keming [7458 0344 2494], all of the Animal Husbandry and Veterinary Medicine Research Institute, Xinjiang Academy of Agricultural Reclamation Sciences (14)

Feeding Piglets with Non-colostrum Artificial Sucking Substitute.....Zhao Xianrui, et al. (17)

Induced Estrus Synchronization in Cows Treated with Prostaglandin Analog Plus Estradiol Benzoate.....Zhao Xinfa (19)

Test on Freezing Centrifuged Boar Semen.....Ce Miao (21)

Study on Technology of Freezing Boar Semen.....Xi'an Animal Husbandry and Veterinary Station (22)

Study on Factors Affecting Fertility in Dairy Cows..... Wang Yuanxing [3769 0337 5281], Shen Jiasen [3088 1367 2773], Dai Xingting [2071 2622 1656] and Lin Quanzeng [2651 0356 2582], all of the Zhongshan Dairy Farm, Nanjing (26)

Spreading AI Technique to Raise the Conception Rate and Litter Size of the Sow.....Chen Wanming, et al. (29)

Test for Estrous Ewe in Small Groups at Night.....Li Yingxin (30)

Study of Classification System of the Chinese Horse Breeds .....Wang Tiequan [3769 6993 2938], Institute of Animal Husbandry, Chinese Academy of Agricultural Sciences (30)

Some Problems with the Technical Policy of Rabbit Raising in China.....Ren Zhenhe [0117 2182 3109], Zhangjiakou Agricultural Specialty School, Hebei (31)

Pig Industry in Denmark.....Huang Zhong [7806 1813], Department of Animal Husbandry, Beijing Agricultural University (36)

A New Method of Ear-marking for Pigs.....Jing Fulin, et al. (40)

Book Review: "Statistic Genetics".....written by Alan Robertson, translated by Yang Da (back cover)

9717
CSO: 4007/113

TABLE OF CONTENTS OF 'SENGONG KEJI TONGXUN' NO 8, 1981

Beijing SENGONG KEJI TONGXUN [FOREST INDUSTRY SCIENCE AND TECHNOLOGY] in Chinese
No 8, Aug 81 inside front cover

[Text] Study on the Installation of Herringbone Concrete Engineering at the Bottom Slope of Raft Flume.....Li Bogong [2621 0130 1872], Fujian Forestry Survey and Design Institute (1)

A Preliminary Report on the Self-made Instrument for Measuring Road Curve..... (3)

Discussions on the Determination of Rational Loads for Wood Transporting Truck..... (5)

A New Automatically-controlled Device for Sorting Logs..... (7)

Analysis and Prevention of Loosening of the Pinion Bearing Seat on the Final Speed Reducer of Dongfanghong 54/75 Bulldozer..... (8)

Several Methods for Cold Starting of GJ85 Chain Saw under Severe Cold..... (9)

Test of Cold-setting Adhesive..... (10)

Use of the Process of Fiberboard Mat Charging into Hot Press..... (11)

Method of Determination for the Solid Content, Curing Speed and Pot Life of Urea-formaldehyde Resin.....Li Lanting [2621 5695 0080], Northeast Forestry College (13)

New Type of Air-filled Roll Feeder..... (15)

Use of Granite for the Lining of Superheated Steam Kiln..... (17)

Selection of Parameter for Saw Teeth Form..... (21)

Two Kinds of Bundling Log Devices Used for Trucks..... (23)

Yarding Test for the Cable Way with Three Support Points..... (25)

The Productivity of Skidders..... (26)

Research and Production of Oriented Particleboard in Foreign Countries..... (30)

9717
CSO: 4007/116

TABLE OF CONTENTS OF 'SENGONG KEJI TONGXUN' NO 9, 1981

Beijing SENGONG KEJI TONGXUN [FOREST INDUSTRY SCIENCE AND TECHNOLOGY] in Chinese No 9, 15 Sep 81 inside back cover

[Text] Sealing Performance of Pneumatic Device..... (1)

Successful Trial-manufacture of Synthetic Resin Brake Shoes.....Hong Haitao [3163 3189 3447], Sanchazi Forestry Bureau, Jilin (2)

On Slip Control of the Machines for Lifting Logs Out of the Water..... (3)

The Calculation of Static Tension Force in the Round Arc Sections of the Machine for Lifting Longitudinal Logs Out of the Water..... (5)

The Application of Image Map in the Technological Design of Felling Areas..... (6)

The Theoretical Calculation of Transporting Weed Trees with Rubber Pontoon.....Qi Jitang [7359 3444 2768], Nanjing College of Industrial Processing of Forestry Products (7)

Choice of the Universal Joint of Forest Machines..... (9)

Preliminary Study on the Process of Wireless Hot Pressing in the Wet Method of Fiberboard Production..... (10)

Study and Use of MJX-200 Chip-N-Saw..... (14)

Determination of the Dry Matter Content of the Urea-formaldehyde Resin Liquid with Diffraction Meter..... (17)

Improvement of the Installation for Sealing Rings of the Hot Press Cylinder..... (18)

Improvement of the Mechanical Control Apparatus for the Head Blocks of Band-saw Carriage..... (19)

Development of Balloon Yarding in Foreign Countries..... (20)

Studies on How to Further Improve Mechanized Felling Device..... (22)

Improving the Mounting Operation of Cableways for Wood Yarding..... (24)

A Brief Account of the V 34-DB Veneer Slicer Made in Japan ..... (26)

Research and Production of Oriented Particleboard in Foreign Countries..... (28)

9717
CSO: 4007/126

FIVE MEASURES OUTLINED FOR CHINA'S AGRICULTURAL DEVELOPMENT

Hong Kong TA KUNG PAO in Chinese 8 Nov 81 p 1

[Article by Zhan Wu [6124 2976], Director, Agricultural Economics Institute, Chinese Academy of Social Sciences: "How Should China Develop Its Agriculture?"]

[Text] [Editor's Note:] "Some reports from Beijing tell of convening during the month of the National People's Congress to discuss the issue of reform of the people's communes. At a time when agricultural and economic experts are giving serious attention to how China's agriculture should be modernized and to avoiding the tortuous road of the past, the present article presents a comprehensive analysis of China's agricultural development strategy from which can be seen the concern of China's scholars about future development of agriculture.

The former erroneous leftist policies with their unvarying economic composition and unvarying farming methods were one of the major reasons why China's agriculture was unable to develop rapidly. In a recent major symposium at which the director of the Agricultural Economics Institute of the Chinese Academy of Social Sciences, Zhan Wu, conducted a comprehensive analysis of China's strategy for agricultural development, he noted that the damage caused by unvaried policies was not slight. He also noted at the same time that the building of a structure in which collective ownership predominated, that was economicly diversified, that had diverse forms of farming, and in which numerous systems of responsibility coexisted was a major measure in the implementation of China's strategy for agricultural development.

Currently, academicians in China have launched a fierce debate on the question of strategy for development of agriculture. Zhan Wu has put forward his initial thoughts to assure that the goals of China's agricultural development strategy will be realized.

Zhan Wu proposed five major measures to implement China's strategy for agricultural development as follows:

Permit the Peasants Themselves to Select the Farming System

Devise a long term stable strategy in which the collective economy is the dominant body, while at the same time actively develop state farms, and household sideline

occupations, and permit the existence and development of individual farm industry under certain conditions. This possesses major significance in the strategy for development of agriculture. Moreover, it is necessary as well to respect the ownership and right to self-determination in operations of the collective economy, allowing the peasants themselves to freely select farming methods, allowing horizontal diverse economic federation, and permitting diverse forms to co-exist. Not only is the long term co-existence of the publicly owned economy and household sideline occupations inevitable, they can be interrelated and mutually advancing. Household sideline occupations are capable of playing a major role that the publicly owned economy cannot take the place of, and the ratio of household sideline industries in agriculture must be increased.

In a discussion of foreign economies, Zhan Wu noted that there are three different economies in the Soviet Union and the various countries of eastern Europe. There is the economy in which the state economy is dominant (the USSR); the one in which the collective economy predominates (Hungary), and the one in which the individual economy predominates (Poland). Experience has shown that the results have been quite good in Hungary's collectively dominated economy.

Building a Fine Agricultural Ecological System

Real use of the ecological balance concept to guide all agriculture (including farming, forestry, animal husbandry and fisheries), with gradual change from a vicious cycle to a benign cycle. Looked at in long range terms, this is a route requiring little investment for fairly great results. A program of overall simultaneous development of farming, forestry, animal husbandry, sideline occupations and fisheries must be carried out. In the planting industry, a plundering style of farming must be thoroughly rooted out and the principle of a combination of use and nurture of the land using sensible rotation of crops instituted. Serious attention should be given at the same time to a combination of modern scientific techniques and traditional agriculture, and a combination of organic agriculture and inorganic agriculture. In this way, China's agricultural development will be able to walk the road of low expenditures, low cost, and high benefits.

At the present time, China's forest cover rate is less than 50 percent of the world average. It will take a great deal of effort if China is to increase its forest cover rate from the present 12.7 percent to between 20 and 30 percent by the year 2000. The key problem at the moment is to make the building of firewood forests and rapidly growing timber forests the main focus in order to solve the needs of the peasants for fuel and the people's need for lumber. This would be a breakthrough in stopping the vicious cycle. An effective way to hasten afforestation would be to adopt specialized contracting, including having specialized households afforest and look after the forests. Barren mountains that neither the state nor the collective is able to shoulder may be distributed to commune members as privately held mountains, and myriad households stimulated to afforest them.

As a result of overgrazing and lack of attention to building of grasslands, almost half of China's grasslands have degenerated. From now on, the amount of grazing should be strictly regulated, and either a system of responsibility for grasslands established, or individually retained grasslands designated.

Raising of fish and planting of water chestnuts should be done in reservoirs to help use water to nurture water.

Coastal and fresh water fishery resources have been damaged to an astounding degree. For a rather long time to come, the only outlet for the fishing industry will be artificial hatcheries in a combination of raising fish and fishing with the raising of fish dominating. No fishing seasons and area prohibited to fishing will have to be established to protect the coastal fishing industry.

Establishment of Rural Systems of Economic Management

While maintaining steady increase in total grain output, gradually increase the ratio of economic crops, of forestry the livestock industry, sideline occupations, fishery industry, and industry, commerce and transportation industry in terms of output value, area, and assignment of manpower. This should be done in order to build a rural agricultural economy structure in which grain and economic crops, farming and forestry, animal husbandry, sideline occupations, and fisheries are closely related, and in which agriculture, industry, commerce, and transportation see all around development.

During 1979 and 1980, a reduction in grainfield area amounting to more than 60 million mu took place. The grainfields were converted to the growing of economic crops or returned to forests. Despite this, food output reached an all-time high since the founding of the People's Republic. This shows that the aforestationed program is completely workable.

Use of the mutually promoting role of farming and forestry, animal husbandry, sideline occupations and fisheries to hasten agricultural development, particularly of forestry, livestock raising, sideline occupations, fisheries and other economic diversification. Integrated operation of the production, processing, sale, and transportation of agricultural products is, in essence, a change in the piecemeal and disjointed, irrational management system. Revival of the inherent dialectic relationship of these sectors of the rural economy is a strategic measure in making equitable the rural economic structure and the management system.

Illiteracy Is an Impediment to the Development of Agriculture

China's current commodity rate for agricultural products is only 30 percent, which is a far cry from the more than 90 percent of developed countries. In order to develop commodity production, it is necessary, first of all, to gradually effect regionalization, specialization, and intensive farming in the production pattern, to establish a foundation for agricultural products. Second, it is necessary to vigorously develop economic diversification and processing industries for agricultural byproducts, to foster specialized households and other unified development.

The so-called "knife and whip policy" in procurement of agricultural products--"driving with a whip" when agricultural products are insufficient, and "slashing with a knife," when they are too numerous--is a great obstacle in development of a commodity economy. This shows that reforms to the system and structure whereby commodities circulate will brook no delay. In building modernized agriculture, one cannot only talk about labor intensiveness. Of more fundamental significance is intensiveness of technology and intensiveness of scientific knowledge.

The past inattention to investment in knowledge has created serious consequences. At the present time, the cultural and scientific level and the management level of the broad masses of commune members and cadres is very low to the extent that among youths and young adults, illiteracy amounts to 30 percent. This poses great difficulties for the development of rural technical forces.

Right now, attention has to be given the elimination of illiteracy, to reforming the rural education structure and system, to strengthening secondary school technical education for peasants.

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9432
CSO: 4007/102

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GAO Fenglan [7559 7685 5695]
WANG Jinling [3769 6855 7117]
et al.

ORG: MENG, YANG, GAO and WANG all of Beijing Agricultural College; et al.

TITLE: "Effect of Different Ecological Conditions on Varietal Yield Characteristics of Soybeans"

SOURCE: Harbin DONGBEI NONGXUEYUAN XUEBAO [JOURNAL OF NORTHEAST AGRICULTURAL COLLEGE] in Chinese No 3, 10 Oct 81 pp 15-21

TEXT OF ENGLISH ABSTRACT: Ten soybean cultivars which had been released in Heilongjiang Province during different periods were tested at four different ecological localities with two seeding rates. Results of this study showed that high and stable yield of soybeans should be based upon a certain adaptable ecological type. The plant height, number of branches, number of pods on branches and length of internodes of soybeans are positively correlated with yield on alkaline and infertile soil of Anda County, and therefore soybeans with tall plants and proliferous branches are adaptable types for such ecological conditions. On the other hand, on the fertile soils of Suihua County, plant height, number of branches, number of pods on the branches and length of internodes are negatively

[Continuation of DONGBEI NONGXUEYUAN XUEBAO No 3, 10 Oct 81 pp 15-21]

correlated with yield. This shows that soybeans with medium plant height, short internodes, and more pods on the main stem are adaptable types for higher soil fertility. The shift of soybean types of commercial varieties in the Songhua and Harbin areas also reveals that there is a close relationship between cultival conditions and soybean ecotypes.

AUTHOR: HU Dianjin [5170 3013 6855]
et al.

ORG: HU of Beijing Agricultural College; et al.

TITLE: "Feed Intake and Reproductive Performance of Multiparous Min and Harbin White Sows"

SOURCE: Harbin DONGBEI NONGXUEYUAN XUEBAO [JOURNAL OF NORTHEAST AGRICULTURAL COLLEGE] in Chinese No 3, 10 Oct 81 pp 50-58

TEXT OF ENGLISH ABSTRACT: The multiparous Min (M) and Harbin White (HW) sows were used to determine total feed consumed, weight changes, litter size at birth and weaning, litter growth rate and creep feed fed during one reproductive cycle to assess the genotype of these two breeds and their reproductive performance under a fixed feeding regime. During gestation, 6183 Kcal DE and 186.4 g of DCP were consumed by the M and 7011 Kcal and 206.8 g respectively by HW per head daily. During a 60 day lactation period, their respective DE intakes were 13435 and 15608 Kcal and 568.4 and 634.8 g. Average weight increase during the gestation period was 50.52 kg for the M and 48.63 kg for the HW. Average weight loss during the nursing period was 20.24 kg for the M and 25.10 for the HW. Under the designated feeding regime, total number of piglets born was 17.2, and number born alive 15.2 for the M; corresponding figures for HW were 13.3 and 11.5 respectively. Litter number at weaning and individual weight were 10.9 and 13.91 kg for M and 10.2 and 15.7 kg for HW.

9717
CSO: 4009/164

AUTHOR: LUO Xiaonan [5012 5135 0589]
ZHUO Wenxi [0587 2429 4406]
CHEN Darong [7115 6671 2837]

ORG: All of Fujian College of Agriculture

TITLE: "Observation of Toxicity of Several Pesticides on Parasitic Wasps of the Egg of Rice Planthoppers"

SOURCE: Tianjin ZHIWU BAOHU [PLANT PROTECTION] in Chinese No 5, 8 Oct 81 pp 24-25

ABSTRACT: Anagrus spp. is the major type of parasitic wasps of the egg of rice planthoppers and has obvious action of natural control on the damage to crops from rice planthoppers. For the purpose of harmonizing chemical control with biotic control, several pesticides commonly used in rice paddies, including carbofuran, dimethoate, sodium thiosulfate propane, chlorophenyl amidine, etc. are used in a laboratory experiment to determine the toxicity of each of these chemicals on adult wasps or on the wasp eggs inside the host egg of rice planthoppers. These chemicals are found to be extremely toxic to adult wasps (Anagrus spp.) which will die within 8 hours after contacting any of these chemicals. Toxicity of these chemicals to wasps of the parasitic state varies considerably. A mixture of sodium thiosulfate propane and dimethoate is found to be highly effective for killing planthopper eggs but not very harmful to parasitic wasp egg or the juvenile stage parasitic wasps. The experiment also includes a small area field test.

AUTHOR: LI Fengchun [2621 7364 2504]
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ORG: Both of Plant Protection Institute, Chinese Academy of Agricultural Sciences

TITLE: "Hydroponic Cultivation of Seedlings for the Identification of Physiological Strains of Wheat Rust Pathogens"

SOURCE: Tianjin ZHIWU BAOHU [PLANT PROTECTION] in Chinese No 5, 8 Oct 81 pp 40-42

ABSTRACT: For the purpose of identifying the 3 physiological strains of stripe, leaf, and stem rust pathogens, the method of pot culture of host wheat plants has always been adopted, with shortcomings of occupying a large greenhouse area, consuming a great deal of labor to load, unload pots with soil and move them around, and being difficult to regulate and standardize nutritional conditions. A hydroponic method of preparing a culture medium by adding 1.2 g of calcium nitrate, 0.02 g of iron oxide, etc. to 1 liter of drinking water and using it to sprout wheat seeds to be used for inoculation and identification of the 3 strains of rust pathogens is introduced. The procedure and the results are compared with the ordinary pot culture technique.

6248
CSO: 4009/134

AUTHOR: HE Manshi [0149 2581 6107]

ORG: Jinjiang Prefecture Institute of Agricultural Sciences, Fujian Province

TITLE: "Characteristics of Jinmo-2148 and Its High Yield Cultivation Technique"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 10 Oct 81 pp 1-5

ABSTRACT: Jinmo-2148 is a product of the institute. Offsprings of hybridization of geographically distant and ecologically very different superior varieties were bred repeatedly under different conditions of soil, climate, and ecological environment of South and North China to produce this breed of large spikes, strong stems, and heavy grains. It has been extended in Fujian as well as other provinces of spring wheat to areas of 4 million mu, with yield of 4-8 hundred jin/mu. Years of cultivation through good and disastrous years have proved it to be adversity and rust resistant, highly adaptable, and easily cropped. Yield comparison with other breeds especially confirmed its high and stable yield characteristic to cause it to be regarded as one of the important standard spring wheat breeds. Its growth and development period is 140-150 days, varying with the planting time of different areas. When it is planted too late, the nutritional period may lengthen and the high temperature in the late stage may forcibly hasten ripening to reduce the yield, however. These and other special characteristics of Jinmo-2148 are introduced.

AUTHOR: ZHANG Zemin [1728 3419 3046]
ZHANG Qingyuan [1728 3237 6678]

ORG: Both of Sanming Prefecture Institute of Agricultural Sciences

TITLE: "Appraisal of Frost Mold and White Rust Diseases of Cabbage Type Rape"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 10 Oct 81 pp 8-10

ABSTRACT: In 1980-81, the authors planted in small plots a group of 9 early ripening and a group of 9 intermediate ripening rape varieties for the purpose of grading them in accordance with their frost mold white rust disease resistance. Grade 0 means no disease; grade I disease in less than 1/3 of the branches, with a yield reduction below 30 percent; Grade II, disease in 1/3-2/3 branches or 1/3 branches and main stem, with a yield reduction of 30-50 percent; Grade III, disease in all branches or 1/3-2/3 branches and the main stem, with a yield reduction of above 50 percent; Grade IV, disease in entire plant or the plant dies, with a yield reduction of above 90 percent. Compared with the napa type rape, one breed of which was used as the control in each group, incidence of the disease was found to be 40-80 percent less. It is tentatively concluded that with the cabbage type, the root system is more developed and more absorbent, the above ground portion of the plant does not wither early, and the external waxy layer protects the plant from the mold. Possible influence of physiological and biochemical factors on disease resistance remains to be studied in the future.

AUTHOR: GUO Jinwu [6751 3160 0124]

ORG: Ningde Prefecture Agricultural Resources Company

TITLE: "Reasons of Low Yield of Vetch Seeds and the High Yield Cultivation Technique"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 10 Oct 81 pp 11-13

ABSTRACT: Milk vetch [Astragalus sinicus] is the major winter leguminous green manure crop in Fujian, having an important position in the crop rotation system. The yield of seeds is low, however, and after cropping for several years, the yield of seeds may be as low as 10-30 jin/mu. Several years of observation indicates that (1) Only about 10 percent of the 200-300 inflorescences of a vetch plant effectively become pods; (2) Blooming occurs early when the plant is less than 30 cm in height. Low seed yield of local vetch crops has made it necessary to import seeds, which are not adapted to the local temperature. Intermediate ripening breeds of Hunan 70-3 and Jiangxi Xiushui and late ripening breeds of Zhezi No 5 and Pinghu Daye, which are suitable for the climate of Fujian Province should be adopted as standard breeds for regular purification and cultivation. A series of cultivation measures are also recommended for the purpose of producing high yield of grass as well as seeds with these breeds.

AUTHOR: None

ORG: Rice Breeding Cooperative Group, Fujian Province

TITLE: "Summary Report of a 1981 Investigation of Blast Resistance of Early Rice Varieties"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 10 Oct 81 pp 19-21, 5

ABSTRACT: In 1981, blast of rice occurred over large areas of early rice in Fujian Province. Under the leadership of the deputy chief of the Institute of Rice and Wheat of the Provincial Academy of Agricultural Sciences a team was organized to investigate the blast resistance of early rice varieties in 21 production units of 4 prefectures in the province. Results of the investigation indicate that (1) It is necessary to extend dwarf breeds to replace the tall ones and hybrids to replace the dwarf ones; (2) Blast resistance of the red series of early rice is totally lost; (3) Weather conditions encouraged large scale spreading of blast; (4) Too much nitrogen was applied in the blind pursuit of higher yield; (5) Failure of implementing comprehensive measures of prevention and control. The team suggests that disease-resistant breeds should periodically be selected for rotation or replacement, potassium should be added to nitro-fertilizer, straw should be thoroughly removed from the field, and seeds should be disinfected with either 1 percent lime or 401 solution.

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ORG: WU, LIU of Fuzhou Municipal Station of Agricultural Technology; ZHENG of Gushan Commune of Fuzhou City

TITLE: "Effect of High Temperature on Blooming and Fruiting of Paddy Rice"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 10 Oct 81 pp 29-30

ABSTRACT: During the blooming and fruiting period of paddy rice, intense light and suitable temperature are important environmental factors in high yield. With the Red 410 series and hybrids currently being extended as experimental materials, a project was carried out to observe and record the temperature, the number of inflorescences, and the rate of empty hulls after ripening to compare the damage of high temperature during the blooming and fruiting time to the subsequent yield of the various breeds studied. Results of the study indicate that some breeds can withstand high temperature better than others. The paper suggests that in Fujian Province, high temperature tolerant breeds should be preferred, blooming time should be adjusted to 35°C, in low elevation mountainous areas, a heading time of middle Jul-early Aug should be avoided, irrigating during the day and draining at night in the heading period is effective for lowering the temperature, avoiding too much nitrogen and spraying phosphorus to increase grain weight, and harvesting at a suitable time when grains are 90 percent ripe.

AUTHOR: WANG Qitian [3769 0366 3944]

ORG: Institute of Rice and Wheat, Fujian Provincial Academy of Agricultural Sciences

TITLE: "Ingenious Names of Local Paddy Rice Breeds in Fujian"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 10 Oct 81 pp 34-35

ABSTRACT: Fujian Province is in the subtropical zone. With the sea on the southeast side and many mountains on the northwestern side, the elevations of fields have a vertical difference of 400m among the various areas of the province. Cultivation and crop repeating systems vary a great deal with the ecological conditions of these areas and numerous local paddy rice cultivars have evolved through many years of rice culture. Since the liberation, more than 6,000 cultivars have been collected and preserved and they all have very colorful names. Principles of nomenclature of the 6000+ farm cultivars are found to consist of the following: (1) Named for the place of origin; (2) Named for the growth and development period; (3) Named for the shape and characteristics of the plant; (4) Named for the characteristics of the spike; (5) Named for the special adversity resistance; (6) Named for the type of grain, such as xian, geng, starchy, glutinous, etc; (7) Named for a special precious property, such as controlling dysentery, extraordinary fragrance, etc. Names of these cultivars are, therefore, useful indicators for modern rice breeders in their collection, preservation, research and utilization projects of agricultural modernization.

AUTHOR: LU Kaichun [4151 7030 2797]

ORG: Research Institute of Fruit Trees, Fujian Provincial Academy of Agricultural Sciences

TITLE: "Developing Woody Oil Materials With All Out Efforts"

SOURCE: Fuzhou FUJIAN NONGYE KEJI [FUJIAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 10 Oct 81 pp 52-53

ABSTRACT: Fujian is a province of large population and little land. Mountains take up 90 percent of the area. While oil is one of important foods of the people it is also an important raw material for industrial production. Herbaceous oil crops inevitably compete with grains and other economic crops for the limited farming acreage available in the province. The mountains of the province have a favorable climate for the development of woody oil materials, however. This paper recommends and describes the essential characteristics of the following oil-producing tree species: (1) Oil tea [Camellia meiocarpa Hu] (2) Oil olive; (3) Hazelnut tree; (4) Tung oil tree [Aleurites fordii Hemsl] (5) Chinese tallow tree [Sapium sebiferum Roxb.] (6) Walnut tree. Oil content, nutritional content, medicinal or industrial applications, suitable areas of cultivation, and cropping technique of these oil-producing trees are described.

6248
CSO: 4009/122

AUTHOR: LI Zhichao [2621 1807 6389]

ORG: Yuanping School of Agriculture, Shanxi Province

TITLE: "Strengthen Seedling Stage Management of Wheat Fields to Prevent Dead Seedlings of Overwintering Wheat"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 10, 17 Oct 81 pp 8-9

ABSTRACT: In north Chinadead seedlings of overwintering wheat have a serious effect on yield. In an average year, 5-10 percent of dead seedlings will reduce the yield about 10 percent. Some years, more than 30 percent of the seedlings may die and large areas of replanting may even occur. Delegates to a Jul conference on the problem in Beijing analyzed the causes to be as follows: (1) extremely low temperature; (2) prolonged low temperature even not so critically low; (3) variable temperature to cause recurrent thaw and freeze; (4) windy and little snow; (5) damage from accumulated snow or ice in the field; (6) poor ground leveling; (7) too early or too late planting; (8) improper nitrogen-phosphorus ratio; (9) unsuitable wheat breed; (10)lack or improper winter sprinkling. Following measures for preventing dead seedlings are proposed: (1) proper winter sprinkling; (2) timely light hoeing after sprinkling; (3) early winter application of fertilizer; (4) suitable banking with soil; (5) tightly pressing the surface soil; (6) keeping animals out of wheat fields. Effects and procedures of these measures are explained.

AUTHOR: CHEN Hongzhao [7115 7703 6856]

ORG: Animal Husbandry Division, Department of Agriculture and Forestry, Jiangsu Province

TITLE: "Good Results From Breeding Hybrid Porkers"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 10, 17 Oct 81 p 37

ABSTRACT: In 1980, the department organized schools, research units, and local pig breeders to carry out a carefully designed experiment with 260 sows in 24 hybridization groupings to produce 1,179 hybrid porkers to be sent to 3 stations in south, central, and north Jiangsu for experimental feeding. The porkers are slaughtered at 6,7,and 8 months of age to determine the most economically efficient procedure of hybridization and harvesting. Results of the experiment indicate that (1) Jiangsu-white is the best male to use for hybridization; (2) Taihu-pigs, especially the Erhualian breed, make the best female. (3) The most economically efficient harvesting time for Taihu pig hybrids is 6 months of age, for Jiangquhai hybrids is 7 months, for Dongchuan pigs and Shan pigs is 8 months. Feeding conditions and other related data are discussed.

6248
CSO: 4009/136

AUTHOR: ZHOU Jiachi [0719 1367 7459]

ORG: Suzhou Prefecture Institute of Agricultural Sciences, Jiangsu Province

TITLE: "Seed-saving, High-yield, and Early Maturity Culture of Paddy Rice"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 11, 17 Nov 81 pp 10-11

ABSTRACT: Originally, with single season rice, 150-180 jin of seeds were planted per mu of seedbeds to grow enough seedlings for 7.5-9 mu of paddies, amounting to 20 jin of seeds per mu of paddies. In recent years, with improved conditions of production, fertilizer, and cropping technique, only 10-12 jin of seeds are used for one mu of paddies. About 59.2 jin/mu of seeds are used for seedbeds to cultivate strong seedlings of multiple tillers to be transplanted singly into the paddies. The new technique requires fewer number of seedlings. The contradiction between individual plants and the colony is less acute, the capital cost of seeds is considerably reduced, the plants grow stronger, and the damage by pests and diseases is milder. Practice of this technique by a large number of communes and brigades in Changshu and Wuxi Counties has proved that it does not present a problem in yield. Reduced planting and transplanting density can produce a higher yield and earlier maturity. This fact was proved by several comparative experiments reported in the paper. Attention must be given to the growth and developmental characteristics of the rice breeds and the quality of fertilizer and water management, however.

AUTHOR: QI Qingsheng [4359 1987 3932]

ORG: Beijing Municipal Research Institute of Feed Materials

TITLE: "Comments on China's Methods of Feeding Pigs"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 11, 17 Nov 81 p 29

ABSTRACT: In China, there are many varieties of pigs, feed materials, and methods of feeding. Generally speaking, the feeding techniques may be divided into 3 categories, however. (1) The same feed is given to pigs of all ages; (2) A large quantity of green and rough feed is given to pigs around the time of 35 kg in weight before changing to refined feed in the last stage; (3) Based upon the nutritional needs of the pigs, 3 types of feed materials are prepared for the first stage (20-35 kg) the middle stage (35-60 kg) and the late stage (60-90 kg.) According to an experiment carried out jointly by Institute of Animal Husbandry Chinese Academy of Agricultural Sciences and Institute of Animal Husbandry Shanghai Academy of Agricultural Sciences, the 3rd method is the best. The formulae for mixing the 3 types of feed materials for the 3 stages of growth of the pigs are described.

6248
CSO: 4009/166

AUTHOR: LIU Cunde [0491 1317 1795]
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et al.

ORG: All of the Institute of Botany, Chinese Academy of Sciences

TITLE: "Effect of Oxygen and Carbon Dioxide on Isozymes of Rice and Wheat in Germinating Seeds"

SOURCE: Beijing ZHIWU XUEBAO [ACTA BOTANICA SINICA] in Chinese No 5, Sep 81 pp 364-370

TEXT OF ENGLISH ABSTRACT: The isozymes of cytochrome oxidase (COD), malate dehydrogenase (MDH), glucose-6-phosphate dehydrogenase (G6PDH), peroxidase (POD) and alcohol dehydrogenase (ADH) were measured in embryos from rice and wheat seeds germinated in atmospheres ranging from 1 to 10 percent O_2 and 5 to 25 percent CO_2.

The isozyme bands of MDH and COD decreased in atmospheres containing from 1 to 10 percent O_2, but increased for G6PDH under that lower oxygen. COD and POD isozymes decreased when the CO_2 concentration (5-25 percent) was nearer or higher than O_2 concentration (25 percent). Under that condition, MDH, G6PDH and ADH were increased. These data suggest that gene expression is regulated by internal and external factors.

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WANG Wenhong [3769 2429 1347]
HE Xiwen [0149 1585 2429]
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ORG: All of the Laboratory of Plant Physiology, Institute of Botany, Chinese Academy of Sciences

TITLE: "Effect of Metabolic Inhibitors on Vernalization Process in Winter Wheat"

SOURCE: Beijing ZHIWU XUEBAO [ACTA BOTANICA SINICA] in Chinese No 5, Sep 81 pp 371-376

TEXT OF ENGLISH ABSTRACT: In this paper the results of the influence of various metabolic inhibitors on different periods of the vernalization process in winter wheat are provided. It was found that the initial period of vernalization is very sensitive to respiratory inhibitors, such as azide and 2, 4-nitrophenol. In the middle period, the inhibitor of nucleo-acid metabolism, such as 2-thiouracil, significantly prolonged the process of vernalization. During the third period, the protein metabolic inhibitor, such as chloromycetin, strongly inhibited the vernalization process. Our experiments demonstrated that a remarkable replacement of metabolic patterns existed during the course of vernalization of winter wheat. The relative metabolic processes during the time of vernalization not only carried on differently in rate and action model of inhibitors, but also alternatively.

[Continuation of ZHIWU XUEBAO No 5, Sep 81 pp 371-376]

Therefore, we assumed that the vernalization process of winter wheat may be divided into several periods (sub-processes) with different metabolic patterns. Based on our results, we tentatively concluded that there are at least three sub-processes during vernalization: the first sub-process is mainly determined by carbohydrate oxidation and phosphorylation processes; the second sub-process is mainly determined by nucleic acid metabolism and the third sub-process is mainly determined by protein metabolism.

9717
CSO: 4009/155

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ORG: Agricultural Meteorology Experimental Station, Guangxi Meteorological Observation Station

TITLE: "Forecasting Time of Occurrence of Each Generation of Yellow Stem Borers of Rice Using Meteorological Factors"

SOURCE: Beijing KONCHONG ZHISHI [ENTOMOLOGICAL KNOWLEDGE] in Chinese No 5, Sep 81 pp 193-197

ABSTRACT: In Nanning Prefecture, 5 generations of yellow stem borers [Chilo simplex] occur in a single year. Based upon the data produced from baiting moths with lamps and meteorological information of several years, the author used the method of mathematical statistics to search for the major factors influencing the time of occurrence (early or late) of each generation of the borers for the purpose of establishing a forecasting formula for the occurrence of each generation, For the overwintering generation, the formula is $Y = 149.9 - 5.71X$. Y is the peak of occurrence of the overwintering generation; X is the effective accumulation of temperature in Feb of a daily mean of 16°C or higher in the 5cm topsoil. Similar formulae are also obtained for the other 4 generations. These formulae were applied in 1979 to predict the time of occurrence of each generation of the borers with very good results. Details of the study are reported.

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XIANG De [0686 1795]

ORG: All of Disease and Pest Survey and Report Station, Qianyang County Bureau of Agriculture, Hunan Province

TITLE: "Condition of Occurrence of Rice Stem Miners and Investigation Into Its Prediction and Forecast"

SOURCE: Beijing KONCHONG ZHISHI [ENTOMOLOGICAL KNOWLEDGE] in Chinese No 5, Sep 81 pp 197-199

ABSTRACT: Before the 70's, the mountain region of Qianyang County practiced the single season rice cropping system, and stem miner (Chlorops oryzae Matsumura) was rarely discovered on rice and only under the condition of delayed planting. By 1974, the dual-season cropping system had been extended to some mountainous areas of 400-600m in elevation while the rate of damage from miners increased to 40 percent for early rice. This paper reports a study of its life history and habits. The quantity of its second generation appears to be determined by the number of rainy days and the relative humidity from middle Jun to early Jul. Effective methods for its prevention and control are only briefly discussed.

AUTHOR: ZHANG Zongbing [1728 1350 3521]

ORG: Department of Biology, Beijing University

TITLE: "Selectiveness of Pesticides (II)"

SOURCE: Beijing KONCHONG ZHISHI [ENTOMOLOGICAL KNOWLEDGE] in Chinese No 5, Sep 81 pp 228-230

ABSTRACT: At present, there is yet no ideally selective pesticide, while most highly efficient, low toxicity, and low residue pesticides are broadspectrum ones, such as pyrethrins. The solution to the problem of reasonable application of pesticide, especially concerning the protection of natural enemies, depends, therefore, mostly on ecological selectiveness, which includes the following measures: (1) Control of dosage: Too low a dosage may stimulate the growth of pest instead of controlling it (the Arndt-Schulz law.) To determine the most suitable dosage for a particular pest is very important. (2) Localized application: When the biological characteristics of a pest are understood, chemical pesticides may be applied to the soil, the root system, on nearby grass, etc. to control it. (3) Regulated method of application: Using granular instead of powdered chemical, mixing it with a bait etc. may reduce the damage to natural enemies. (4) Suitable application time: A most ideal time to apply pesticide must be found to produce the greatest effect on killing the pest and the least harm to its natural enemies. (5) Application of internal absorbent pesticides: They must be combined with dosage control, rotated or interspaced application, etc. to prevent them from indirectly killing natural enemies of pests.

AUTHOR: SHI Guoding [8902 0948 7844]
LI Guochu [2621 0948 2691]
CHEN Xueli [7115 1331 4409]

ORG: All of Xuzhou Prefecture Institute of Agricultural Sciences, Jiangsu Province

TITLE: "Night Vision Instrument and Its Preliminary Application in Entomological Research"

SOURCE: Beijing KONCHONG ZHISHI [ENTOMOLOGICAL KNOWLEDGE] in Chinese No 5, Sep 81 pp 231-232

ABSTRACT: The SGY-1 night vision instrument emits infrared ray onto a target to obtain a reflection which becomes a visible image on the instrument to be observed. In the spring and autumn of 1980 the authors used the instrument to observe the behavior of army worm leaf rollers feeding on rice, and the feeding ability of frogs. Army worms are found to be very sensitive to visible light but under infrared ray they are observed to feed on rape blossoms continuously. They are also observed to move from rape field to wheat field after midnight. These and other nighttime activities seen with the instrument are described.

6248
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30 December 1981

China Report

AGRICULTURE

No. 181

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JPRS 79760

30 December 1981

CHINA REPORT

AGRICULTURE

No. 181

CONTENTS

I. GENERAL INFORMATION

National

Changed Role of Bank of Agriculture in Changing Rural Economy Discussed
(Cai Jiqun; NONGYE JINGJI WENTI, 23 Oct 81)..... 1

Tremendous Rapeseed Yields Reportedly Achieved Through Seedling Transplanting
(RENMIN RIBAO, 16 Oct 81)..... 12

'SHIJIE JINGJI DAOBAO' Discusses Agricultural Development
(SHIJIE JINGJI DAOBAO, 2 Nov 81)..... 13

Greater Emphasis on Bean Production Urged
(Zheng Zhuojie; RENMIN RIBAO, 5 Nov 81)..... 17

Planting of Forests To Produce Fruits, Nuts, Oils Urged
(Luo Yongquan; RENMIN RIBAO, 5 Nov 81)..... 19

New Plant Growth Regulator Successfully Developed
(GUANGMING RIBAO, 9 Nov 81)..... 21

Xiyang County's Achievements Reported
(Li Sirong, Zhao Zhansuo; SHANXI RIBAO, 18 Nov 81)..... 22

Vigorous Development of Fresh Water Fish Industry Discussed
(Cong Ziming; NONGCUN KEXUE, Nov 81)..... 25

Change of Economic Functions in Rural Areas Noted
(Zhou Qiren, Wang Xiaoqiang; RENMIN RIBAO, 1 Dec 81)..... 29

CPPCC Members Discuss Afforestation
(Beijing Domestic Service, 10 Dec 81)..... 33

NPC Deputies Propose Law To Protect Pastures
(XINHUA Domestic Service, 10 Dec 81)..... 35

PRC Animal Husbandry Develops Better Cattle
(XINHUA, 17 Dec 81)..... 36

Briefs
Tree-Planting 37
Chemical Fertilizer Quota Fulfillment 37

Anhui

Anhui Delegates Discuss Zhao's Work Report
(XINHUA Domestic Service, 8 Dec 81)..... 38

Zhang Jingfu Issues Written Report at NPC
(XINHUA Domestic Service, 10 Dec 81)..... 39

Beijing

Beijing Takes Steps To Eliminate Growing Rat Population
(BEIJING RIBAO, 18 Oct 81)..... 41

Government-Sponsored Meeting, by Wu Yafang
Methods of Extermination, by Guo Wen
Success in One County, by Song Chengming, Guo Jinwu

Fujian

New Emphasis Given Fresh Water Fish Raising
(FUJIAN RIBAO, 22 Oct 81)..... 43

Techniques for Increasing Peanut Yields Sketched
(Yi Xiuzhu, Hong Wolin; FUJIAN RIBAO, 23 Oct 81)..... 44

Briefs
Sanming Prefecture Grain Output 46

Gansu

Feng Jixin Reviews Current Situation
(XINHUA Domestic Service, 8 Dec 81)..... 47

Briefs
Diversified Economy Conference 49
Agricultural Production 49

Guangdong

Efforts Underway To Make Up for Earlier Crop Disasters
(NANFANG RIBAO, 30 Oct, 1 Nov 81)..... 50

Yangchun County Winter Crops, by Li Guanhu, et al.
Lufeng County Winter Planting
Zhanjiang Prefecture Winter Crops, by He Xiying, Pang Bingxiang

Improving Low-Yield Fields Goal of Capital Construction
(Song Ling, Jing Dong; NANFANG RIBAO, 1 Nov 81)..... 53

Briefs
Nei County Bumper Harvest 55
Vegetable Production Conference 55
Hainan Agricultural Production 55
Agricultural Zoning Conference 56
Hainan Tropical Agricultural Resources 56
Hainan All-Round Harvest 56
Hybrid Rice Cultivation 56
Forestry Development 57
Shaoguan Prefecture Agricultural Harvest 57

Guangxi

NPC Deputies Examine Zhao Work Report
(XINHUA Domestic Service, 8 Dec 81)..... 58

Briefs
Diversified Economy 60
Yulin Winter Sowing 60

Guizhou

Deputies Discuss Premier Zhao's NPC Report
(XINHUA Domestic Service, 8 Dec 81)..... 61

Hebei

Leting County Has Bumper Rice Harvest on Reclaimed Land
(Wei Zhaowen, et al.; HEBEI RIBAO, 18 Oct 81)..... 62

Commune Member's Chicken-Raising Method Emulated
(Zhang Wenguang; HEBEI RIBAO, 23 Oct 81)..... 63

Utilize Underground Water in Hebei Plain Rationally
(Chen Wanghe; HEBEI RIBAO, 24 Oct 81)..... 64

Heilongjiang

Bumper Soybean Harvest Reaped
(Heilongjiang Provincial Service, 11 Dec 81)..... 67

Briefs
Soybean Output 68
Prefectural-Level Agriculture 68

Henan

Briefs
Agricultural Technology 69
Grain, Oil Procurement 69
County Develops Diversification 69
Wheat Tending Circular 69
Agricultural Harvests 70

Hubei

Briefs
New Cotton Strain 71
Enshi Prefecture Bumper Harvest 71
Counties Pig Procurement 71
Prefecture Bumper Harvest 72
Hybrid Rice Harvest 72
Food Oil Production 72

Hunan

Briefs
Hunan Procures Tangerines 73
Procurement Circular 73
Vegetable Supply Conference 73

Jiangsu

Briefs
Xuzhou Prefecture Output Increase 74

Jilin

Deputies Discuss Premier Zhao's NPC Report
(XINHUA Domestic Service, 8 Dec 81)..... 75

Briefs
Grain Output 76
Grain Output 76

Liaoning

Briefs
Soybean Output 77
County-Level Agriculture 77

Nei Monggol

Briefs
Grain Procurement 78
Livestock Procurement 78
Grain Output 78
Xingan League Agriculture 78
Snowfall Reported 78
Afforestation Projects 78

Qinghai

Qinghai Deputies Discuss Zhao's NPC Report
(XINHUA Domestic Service, 7 Dec 81)..... 79

Shaanzi

Briefs
Draft Animal Rearing 81
Industrial Crop Production 81
Agricultural Production 81

Shandong

Wild Plants Collected in Abundance in Two Counties
(DAZHONG RIBAO, 12 Oct 81)..... 82

Briefs
Farmland Capital Construction 83

Shanghai

Need To Reclaim Coastal Areas for Farmland Stressed
(WEN HUI BAO, 18 Oct 81)..... 84

Conditions Are Favorable, by Yu Peihua
Tuanjiesha Project Progresses

Sichuan

All Around Bumper Harvest Attributed to Readjustment
(SICHUAN RIBAO, 21 Oct 81)..... 87

Generally Improved Outlook for Rice Production Reported
(Long Liangchu; SICHUAN RIBAO, 23 Oct 81)..... 89

Some Fall Harvest Figures Given for Tongnan County
(Lai Rengang, et al.; SICHUAN RIBAO, 26 Oct 81)..... 91

Grain Production, Gross Value of Agricultural Output Up
(GUANGMING RIBAO, 8 Nov 81)..... 92

Briefs
Flood Damages Sichuan Canals 94
Forest Fire Prevention 94
Hechuan County Agriculture 94

Xinjiang

Deputies Examine Zhao Ziyang's Report
(XINHUA Domestic Service, 9 Dec 81)..... 95

Xinjiang Meeting Notes Soil Deterioration
(Xinjiang Regional Service, 17 Dec 81)..... 98

Briefs
Winter Livestock Protection 99

Yunnan

Tobacco-Procurement Target Met Ahead of Schedule
(YUNNAN RIBAO, 21 Oct 81)..... 100

NPC Deputy Discusses Protecting Yunnan's Resources
(XINHUA Domestic Service, 12 Dec 81)..... 101

ABSTRACTS

AGRICULTURAL RESEARCH

LIAONING NONGYE KEXUE [LIAONING AGRICULTURAL SCIENCES], No 5,
15 Oct 81..... 102

GUANGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES], No 6,
8 Nov 81..... 104

AGRICULTURAL SCIENCES

SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES], No 10,
20 Oct 81..... 108

METEOROLOGY

ZIXIANG [METEOROLOGICAL MONTHLY], No 11, 10 Nov 81..... 110

I. GENERAL INFORMATION

CHANGED ROLE OF BANK OF AGRICULTURE IN CHANGING RURAL ECONOMY DISCUSSED

Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese No 10, 23 Oct 81 pp 38-43

[Article by Cai Jiqun [5591 3444 5028], Chinese Bank of Agriculture Head Office: "Vigorously Support Development of the Rural Commodity Economy"]

[Text] What is the main job of the Bank of Agriculture during the period of national economic readjustment?

This is a major question relating to the direction in which several hundred thousand rural bank workers will direct their efforts, and it is also a fundamental question in how to correctly put into effect the party's line, the programs, the policies, and the general object of struggle during the period of national economic readjustment.

Some comrades suppose that the basic objective in carrying out national economic readjustment programs is to solve the problem of large fiscal deficits, excessive issuance of currency, and the inflation of market prices. They put forward stringent control of the circulation of currency and vigorous organization of withdrawal of currency from circulation as the main job of the Bank of Agriculture right now. They also suppose that control of issuance of currency requires control in rural villages first of all. They also advocate, "the less money put in circulation, the better, and the more money withdrawn from circulation the better" in rural areas. Under the influence of the aforementioned viewpoint, simply in order to control the circulation of currency, some places rigidly controlled expenditure of cash in their actual work, with the result that in one after another grassroots level banks and credit cooperatives a situation of "no cash reserves today," and "lining up to get cash" occurred, thereby impairing the procurement of agricultural by-products, and impairing development of agricultural production. These problems reflect the continued lack of a proper understanding by some comrades of the goals of national economic readjustment, the tasks, and the programs set by the CCP Central Committee. They have not realized that a national economy founded on agriculture is the basic policy of China, and that readjustment of China's economic structure means, in one sense, a determined tightening up of the scale of capital construction and investment in capital construction. In another sense, it means vigorous development of agriculture and light industry to increase production of consumption goods to lay a material foundation for readjustment of the national economy. Only in this way can the national financial and economic situation make a fundamental turn for the better

to solve the problem of excessive issuance of currency by banks, and only in this way can there be a dependable material foundation.

It was precisely on the basis of the aforestated situation that the CCP Central Committee decided to place readjustment of the serious imbalance among the proportional relationships of agriculture, light industry, and heavy industry in a premier position in the party's work, and place priority development of agriculture and stabilization of the rural villages in which 800 million peasants live in a strategic position in socialist construction as the major link in readjustment of the national economy. Therefore, earliest possible improvement in China's agriculture is a major aspect of putting into effect readjustment programs, and is one of the major ingredients in readjustment of the national economy. It requires each trade and industry, particularly units that support agriculture, to jointly complete this strategic task in their own job positions, from different angles, and according to different needs.

From this may be seen that solution to the problems of large financial deficits and excessive issuance of currency is merely one of the major matters to come to grips with in the process of national economic readjustment, i.e., to say a job to be done in the near term. It is not the basic goal or the basic job to be done in readjustment of the national economy. Therefore, in solving this problem, we can do only that which helps, and certainly not anything that harms, realization of the aforestated strategic task. Things that help important sectors of agriculture--things involving the Bank of Agriculture such as vigorous support to agricultural production, and particularly things to be done in addition to giving active support to grain production such as vigorous support to diversification, development of commodity production, and enlivening the rural economy, are the main jobs that the bank should shoulder in national economic readjustment. Conscientious completion by the Bank of Agriculture of tasks that support agriculture is a concrete manifestation of its conscientious implementation of readjustment programs. Naturally, this is the guiding thought and the guiding program in rural banking work for the present and for some time to come.

Some comrades also suggested that active support to the development of agriculture is a major ingredient in carrying out readjustment programs. There is no doubt about this, but further development of agricultural production requires commensurate expansion of rural credit, and this creates a conflict with state programs for restriction of credit and increased withdrawal of currency from circulation. They suppose that a tightening of credit is a program of national scope to be carried out both in cities and rural villages. But it is in rural villages that the currency flow is excessive, amounting to between 60 and 70 percent or more of the total for the country. If currency circulation is to be restricted, it must be restricted in rural villages first of all. Some comrades also suppose that the current situation of much circulation of currency and little withdrawal of currency from circulation in rural villages is abnormal. They fear this may lead to credit inflation, and they propose placing the focus of curtailment on rural villages. Such views come down to a single point, namely a certain suspicion and misgivings about the Bank of Agriculture's making vigorous support to agricultural production its current primary task. We feel these suspicions and misgivings are unnecessary.

(1) The program of national economic readjustment is a positive program, and a program for continued progress in the midst of readjustment. Tightening of credit and intensification of withdrawal from circulation of currency are major measures that serve the overall goal of maintaining steady progress in order to assure readjustment of the national economy. The object of this tightening is precisely in order to focus use of limited national financial and material strength on those endeavors that should be developed. In terms of China's current realities, this means focusing use on agriculture and the light textile industry for the production of consumer goods. If everything is indiscriminately tightened, and development of endeavors that should be developed is restricted, the tightening would lose its positive meaning.

(2) The programs for tightening credit and for intensified withdrawal of currency from circulation must completely fit in with the program of enlivening the economy. This must be understood at two levels of meaning. One is proceeding from the overall goal and overall requirements of national economic readjustment, using programs for the tightening of credit and for withdrawal of currency from circulation, and use of the economic leverage provided by loans and currency to bring about control over allocations of funds and materials by all trades and industries in the national economy within the limits of national financial and material resources to bring about an overall balance in public finance, credit, and materials. Second is in actual implementation not to become divorced from the differing requirements of the ups and downs and ins and outs of national economic readjustment and not contravene a program that requires both intensification of withdrawal of currency from circulation and the enlivening of the economy. The correct way to do this is through separate handling with no arbitrary uniformity. Whatever needs control should be strictly controlled, and whatever needs to be supported should be strongly supported; whatever needs to be well managed should be earnestly managed well, and whatever should be enlivened should be actively enlivened. Whatever should be cut back should be certainly cut back sufficiently, and whatever should go ahead should certainly "move ahead." Through such efforts can be attained a balance between public revenues and expenditures, no deficits, a fundamental balance between credit income and expenditures, and no more issuances of currency for public finance purposes. Only in this way can the overall requirements of current national economic readjustment be met.

(3) The large amount of money in circulation and the small amount of money withdrawn from circulation in rural villages is an objective reflection of commodity flow. This is because in the daily life of China today, various economic activities at the county and below the county level are largely centered in county seats. At the present time China's commercial, public finance, and banking systems alternate activities among county seats. Consequently, this results objectively in the focus of currency circulation being in rural villages while the focus of withdrawal of currency from circulation is in county seats. A survey conducted in Chengde Prefecture, Hebei Province showed that during the entire year of 1980, the Bank of Agriculture put into circulation 48.3 million yuan, while during the same period the People's Bank withdrew 48.7 million yuan from circulation. During the first quarter of 1981, the Bank of Agriculture put into circulation 90 million yuan of currency, while during the same period the People's Bank withdrew 93 million yuan from circulation. Other places followed roughly the same rule. With development of agricultural sideline production and an increase in state

investment in the purchase of agricultural by-products, plus an increase in purchases of agricultural by-products in farmer's markets by urban residents and staff and workers of plants and mines, the quantity of currency in circulation in rural villages has also increased. At the present time, distribution and supply of industrial articles from everywhere is greater in cities than in rural villages, and state owned businesses are larger than supply and marketing cooperative concerns. In rural villages the supply of goods is inadequate; varieties, designs, and colors of goods are limited; goods that suit needs are scarce; and peasants are in the habit of going into cities to choose the goods they buy. Because of these factors, a large portion of the currency put into circulation in rural villages shows up in currency withdrawals from cities. At the end of 1979 rural village currency circulation in Santai County, Sichuan Province stood at 13.21 million yuan, which was 82 percent of the amount of currency in circulation in the county seat and the surrounding countryside; currency in circulation in cities of the county amounted to 2.81 million yuan, or only 18 percent of the total. Nevertheless, in early 1980 more than 7.5 million yuan of currency was withdrawn from circulation in the cities, a sum greatly in excess of the quantity of currency in circulation in the cities. These facts show that the placing in circulation of a great amount of money in rural villages and little withdrawal of money from circulation there is an objective reflection of commodity flow, and is a normal historical phenomenon. Those who simplistically suppose that because the proportional amount of currency circulating in rural villages is large that the emphasis should be put on rural villages in the control of currency circulation are out of touch with reality.

(4) Production first and distribution later and placing of currency in circulation and withdrawing it later are two objective laws of the reproduction process. In the social reproduction process, all material production consists first of an investment of manpower and materials after which a product is derived. This is reflected in bank credit work in first putting currency into circulation and later withdrawing currency from circulation. Vigorous support to the development of production in agriculture and in light industries is precisely the major road to solution of China's problems of excess currency. This means use of vigorous development of agricultural production to provide conditions for accelerated development of light industries. Only through development of agriculture and light industry can a good material foundation be laid for improvements in national public finances and the national economy and the withdrawal of currency from circulation. It may be said that if one wants to withdraw more currency from circulation, he must first put into circulation whatever is required in agriculture and light industry. One unit of currency may be put in circulation during the first half of the year and several units withdrawn from circulation during the last half of the year or during the following year. This is the best way to "raise chickens to lay eggs." Blind curtailment of development of short term production, and forcibly withdrawing currency from circulation, even though it may achieve the desired effect of withdrawing from circulation large sums of currency in the short run, will bring about even greater complications for the national economy. This is a bad policy of "killing the chickens to get the eggs." No matter whether one starts from the overall benefits from readjustment of the national economy or from the need to withdraw currency from circulation itself, the correct road to take is vigorous development of production. Withdrawal of currency while enlivening the economy is such a road.

(5) That much currency is issued for the procurement of agricultural by-products is a sign of the development of agricultural production. Accompanying implementation by the party of various policies in rural villages, and particularly following promotion of systems of responsibility, which greatly aroused the enthusiasm for production of the peasants, further progress occurred in agricultural production. Increase in the amount of currency used by the state to purchase agricultural by-products was an inevitable trend in agricultural development. In such an input of currency, more is better than less. At the same time, along with the needs of development of agricultural production came gradual state expansion in the supply of the rural means of production and the rural means of livelihood. A commensurate increase in the amount of currency put into circulation for farm loans resulted, and so long as there was a real need, materials were really available, and materials were suited to use, the masses welcomed this and strove for results. Such input is also entirely necessary. These are the two major aspects of current inputting of currency in rural villages, and for these two aspects of input there is collateral. As for an increase in the circulation of cash resulting from increases in cash distributions to commune members, this is even more the result of increases in the commodity rate in agricultural production. These increases cannot become elements in bringing about the inflation of rural credit.

In short, we may make the following conclusions on the basis of the above five points: First, the rural situation has begun to take a turn for the better. The steady increase in the amount of currency circulation in rural villages demonstrates the steady increase in the rural commodity rate, providing the state a steadily increasing supply of agricultural by-products. This is an indicator that the rural economy is beginning to bloom. At the same time, it also places new demands on urban industry and commerce, requiring industry and commerce to provide on time more means of production and means of livelihood for sale to meet needs so that the amount of currency put into circulation and the amount of currency withdrawn from circulation in rural villages will be maintained in virtual balance. Second, the level of China's current agricultural production, no matter whether compared with that of advanced countries or whether compared with the needs of the four modernizations, is still fairly backward. Peasant difficulties in developing production are still rather great. With state assistance in every aspect, full speed improvement in China's agriculture is still an extremely pressing yet arduous task. Vigorous support for further development of agricultural production as the foremost task of the Bank of Agriculture at the moment is extremely necessary. Of course, along with vigorous support for agricultural production, attention to intensified withdrawal of currency from circulation, and the curbing of unnecessary, and inequitable credit inputs that are disadvantageous to economic readjustment is also very important. The view that counterposes support for production and restriction of currency circulation is wrong. Similarly, the view that confuses what is primary and what is secondary, whether support for production or control of currency circulation, is even more wrong.

Attention To Curbing Irrational Rural Credit and Intensification of Withdrawal of Currency From Circulation

The question is how, in the course of actual work, to have a proper grasp, neither blindly curbing nor blindly releasing currency in circulation?

First is the need to strictly limit issuance of farm loans to the credit plans for any given year that have been approved by the state or by banks at a higher level. Currently, the farm loan and capital management system is employing a method of "unified planning with level by level management, and linkage of savings and loans with the curbing of differences." In accordance with the regulations of this method, in any given year the head office of the bank requires of provincial, municipal, and autonomous region branches an accounting of "mid-year differences between savings and loans" and "year-end differences between savings and loans." While everywhere adhering to the principle of no shortfall in savings and no breakthroughs in loans, increased savings taken in and increased loan funds returned at maturity may be issued as more loans for greater support of agricultural development. So long as "materials are available; materials are suited to use, results are sought, and the masses welcome them," this way of doing things should not only be permitted, but should be advocated. Without any increase in the amount of currency put in circulation by the state, through acceleration of capital turnover and increase in the capital utilization rate, and assuring availability of materials, this is one way of making one cent do the work of several to create more wealth for the state, to increase commune and brigade earnings, to provide more consumption goods for society, to increase tax revenues and profits for the public treasury, to help reduce imports, and to help reduce deficits. This is precisely where the banks are in a dominant position to play a special functional role. Only such restriction and release meets the overall interests of national economic readjustment.

Second is the need to strictly control ineffective credit grants. All loans should produce economic benefits and play a real role in increased production and increased earnings. How can this requirement be attained?

First of all there is a need to strive for a unanimity in purpose, in effectiveness, and in repayment of the issuance of loans. The purpose of issuing loans is to develop production, which means using money where it can do the most good and using the minimum expenditure to obtain the optimum economic benefit. In this way, repayment of the loan also has a reliable material assurance. Conversely, if loans are frittered and used willynilly on non-beneficial projects or for the purpose of materials of no benefit, failing to attain the goal of increasing production or increasing earnings, assurance that the loan will be repaid will also be lost.

These three things form a dialectically unified, mutually reinforcing relationship, Consequently it must be required that every cent of loans be used for measures that increase output through "small investment for fast results, and great benefits," and that they truly increase economic benefits through increased production, increased earnings, increased collective accumulations, and increased distributions to commune members.

Secondly, it is necessary to try to correlate "rights, responsibilities, and benefits" in doing loan work. The main reason for poor results from loans in the past were: banks and credit cooperatives had not been granted authority to make loans; communes and brigades had no discretion in the use of loans, and numerous loans were wasted because of "the will of superiors," or "blind guidance." Next, for a long time there has been no strict system of personal

responsibility in loan work; there has only been a "supply system," each echelon "eating out of a large common pot," no conscientiousness, no responsibility, and no implementation, problems that have not yet been completely solved. Third, credit work was not linked to the personal welfare of staff and workers. Today the state has relinquished loan making authority to the banks. Right now what we need to focus study on and solve is formulation by the banks themselves of a management system that combines "authority, responsibility, and benefits," that is consolidated in a system.

Third, there is need for strict control over issuance of credit to commune and brigade enterprises. Commune and brigade enterprises have seen very great development during the past several years. In 1979, commune and brigade enterprises nationwide had earnings totaling 50.4 billion yuan and profits of 10.4 billion yuan. They provided the state tax revenues of 2.26 billion yuan and 2.69 billion yuan of capital for the support of agriculture. Their accomplishments have been remarkable, but there are also serious problems in the development of commune and brigade enterprises. Quite a few places look only at partial economic benefits, not concerning themselves with overall economic benefits. Under the slogan of making the most of individual strengths, they blindly develop, duplicate construction of plants, and blindly expand processing industries in a series of irrational actions. Quite a few commune and brigade enterprises have poor administration and management. Their rate of accumulation is excessively high; their capital construction front is overextended; production teams and commune members derive comparatively little benefits; and there is irrational use made of capital and raw and processed goods; product quality is shoddy and prices high; markets for goods are poor; and stockpiling and waste is serious. All these problems are definitely related to bank loan support. In 1980, total earnings for commune and brigade enterprises amounted to 61.4 billion yuan, an increase of only 19 percent over the previous year, while bank loans to commune and brigade enterprises during 1980 were 82 percent higher than during the previous year, a problem of loan support being given too energetically. This is an important current aspect of rural economic and rural banking work requiring readjustment and control. Needed is a conscientious inspection and inventorying of loan work for commune and brigade enterprises. In places where a lot of loans have been made, problems are not necessarily large; and in places where a small number of loans have been made, there are not necessarily no problems. Specific problems require specific analysis to understand the situation and for case by case handling. It is necessary both to look at the seriousness of existing problems in commune and brigade enterprises, and to look at the importance of development of commune and brigade enterprises in development of commodity production, enlivening the rural economy, invigorating markets, and stabilizing the economy. It is necessary to grasp the principle of the welfare of a part being subordinate to the welfare of the whole, and on the basis of many mergers and much retooling, and a little closing and suspension to play up strengths, play down weaknesses, accentuate advantages and avoid disadvantages, adapt general methods to specific situations, and handle matters on a case by case basis. In getting control over loans, loans should be stopped and loan funds recovered in cases of blind plant construction, redundant plant construction, where large industries compete for raw materials with backward enterprises, and in cases where it has already been decided that enterprises will be closed, suspended, merged, or retooled. In enterprises where necessary, but in which management and administration is poor, loan funds should be strictly

controlled and used for restructuring. In the case of farming industries, hatching industries, energy industries, and enterprises that serve foreign trade and light and textile industries that have prospects for development, in which management and administration is good, that do not compete with large plants for raw materials, the products of which are marketable, and the operation of which produces profits, loan funds for support should be given in a positive yet professional way to promote their healthy development. In the work of supporting commune and brigade enterprises, particular emphasis must be given the "extensive" development track becoming an "intensive" development track, i.e., making the most of production potential in existing enterprises, using a relatively small investment to derive optimum economic benefits, so that they play a greater role in enlivening the rural economy and stabilizing the national economy.

Fourth is need for strict regulation of unsecured loans without collateral to guard against credit inflation. Capital represents goods and goods are the foundation for capital. All capital investment must be secured with materials (including market regulation within plan and outside of plan). Only in this way can the balance of public finance, loans, and material goods be maintained. Unsecured loans for which there is no collateral must inevitably produce credit inflation, create market pressures, and stimulate price inflation.

In order both to help development of production and help withdrawal of currency from circulation, attention should also be given the following in supplying rural credit capital: more support for capital needed for productive purposes, and proper control over capital needed for consumption purposes; more support for capital needs where investment is slight, results quick, benefits great, and repayment possible within a short period of time, and proper control over capital needed for self-sufficient production; more support of capital needed for small cash investments; proper control over capital needed for large cash investments.

In short, by controlling the aforestated several major aspects, it will be possible to virtually plug all the holes that make for willynilly investments in farm credit work. This is a sort of control that is of positive significance both as a point of departure and as a point of return in development of production. The passive view that holds that "the fewer issued the better" in regard to farm loans should stand corrected.

Correct Handling of Several Relationships in Rural Banking Work

In order to achieve credit issuance that is able both to effectively support rapid development of agricultural production and able to effectively control rural credit, it is also necessary to correctly handle the following three relationships.

(1) Proper handling of the relationships among vigorous support to diversification, development of commodity production, and active support to grain production.

At the present time, the principal ingredient and orientation in readjustment of the structure of agricultural production is to turn sole concentration on grain production to the track of diversified, all-around development in which the five industries of agriculture, forestry, animal husbandry, sideline occupations, and

fisheries develop simultaneously. This means a gradual movement from the development track of small scale agriculture and small scale grain production to the development track of large scale agriculture and large scale grain production. This is the guiding thought behind readjustment of the structure of agricultural production, and it is also the guiding thought behind Bank of Agriculture support to agricultural production.

As far as China is concerned, grain production still constitutes the foundation for agricultural production; it cannot be ignored or relaxed. However, in any given area, general methods may be adapted to local situations. Where a place is suitable for grain, grain should be grown; where a place is suitable for forests, forests should be grown; where a place is suitable for animal husbandry, livestock should be grown; where a place is suitable for fish, fish should be grown in an accentuation of strengths and avoidance of weaknesses to make the most of advantages. Making the most of advantages is also not doing a single thing, but rather giving proper emphasis to individual things with a single industry being paramount, plus diversification into many things. This is the only way to more advantageously make full use of the abundant natural resources and labor resources of rural villages for the achievement of a situation in which the land yields its utmost, people produce to the limit of their endowments, and goods are used to the full for invigoration of the rural economy.

It should be pointed out that the fundamental problem in China's agriculture is the need to increase in rural village production of all kinds of goods so that the peasants may become prosperous. Unless we do a good job in producing the goods used in a socialist economy, food, clothing, items for use, and industrial raw materials, we have no hope of getting ahead.

It is in this spirit that the Bank of Agriculture and credit cooperatives should, while actively supporting grain production, also vigorously support development of diversification. Distribution and use of capital should be the focus of support. Particularly in places where resources are abundant, conditions are good in every respect, and potential is great but where diversification has not yet been very well developed, this should be treated as an important link.

(2) On the relationship between support for the system of responsibility for production and consolidation of the collective economy.

In order to readjust the management system of people's communes that impair peasant enthusiasm for production and obstruct development of production, all jurisdictions are now in process of promoting various forms of a system of responsibility for production. This is an inevitable trend in reform of the rural economy management system, and it is an important measure in agriculture today for the readjustment of production relationships and the emancipation of productivity so that production relationships will further match development of productivity.

Following promotion of a system of responsibility for production, many new problems arise for rural banking work.

First was new changes in the loan structure. A gradual increase came about in the proportion of individual commune members who were recipients for loans, while the ratio of collective recipients declined relatively. In the use of loans, short term production expenses and medium and small size production equipment loans gradually increased, while loans for large equipment and capital construction of farmlands declined relatively. Loans to individual commune members were used more in production than for living. Both in production and in use of funds there was a lot of autonomy and little blind guidance, and much careful calculation with little extravagance and waste. These new changes in the loan structure reflected prevailing loan policies. In the principles for doing things as well as in accustomed conceptions and work methods, numerous problems require commensurate changes without which it will be very difficult to meet changed conditions.

Second is that both the depth and breadth of rural banking work have raised new demands. Following promotion of systems of responsibility for production, customers for bank and credit cooperative services increased greatly; the range of contacts broadened; the quantity of services became greater; and work became heavier. Objective conditions required our further improvement of service attitude and a change for the better in our work style to improve quality of service. We will have to go into the rural villages, cater to the needs of the peasants, unite closely with the masses, and accommodate the masses in every respect. We will have to diligently study how to run first rate banking business office and credit cooperatives, and in maintaining the principle of essentially the same benefits for banking business office staff and workers as for credit cooperative staff and workers, cause their organizational setup, personnel assignments, and professional division of labor to undergo equitable readjustment and reform, the better to play the role that grassroots organizations should play. At the same time, it will be necessary to expand and strengthen the work of credit cooperative branches below the commune level to make them truly play the role of a popular lending organization. This is a major key in whether current rural banking work can keep apace of the needs of the developing situation.

The third is that the relationship between farm credit and debts has conferred new substance and raised new problems. For example whether general production expenses and small production equipment loans are the responsibility of the original production team for unified repayment or whether they are the responsibility of commune members practicing a system of responsibility for repayment. Who should be responsible for repayment of loans for farm machinery and equipment and water conservancy projects, and how responsibility for old borrowed funds should be placed, and how they should be repaid etc. are all problems requiring study and solution.

(3) On strengthening of the relationship between withdrawal of credit and withdrawal of goods.

There are numerous channels for the withdrawal of rural village currency. There is public finance tax revenues and profit income. There is labor revenue in the service trades. There is savings taken in by the banks themselves and the collection of loans that have matured, as well as transfer accounts settlements and cash management. There is also the income of commercial departments from

sales of goods etc. All of these withdrawal channels are closely related to the work of the Bank of Agriculture. They must be given all-around serious attention; planning as a whole must be done; attention must be given the main points, general attention given, and each handled separately.

Bank withdrawal of credit is an important withdrawal channel. Presently China lacks an abundance of goods and saleable commodities are lacking. In addition, under present conditions of a tremendous increase in rural cash put in circulation, further expansion of savings funds, prompt collection of loans that are due, and strengthening of rural transfer accounts settlements and cash management are particularly necessary.

However, fundamentally speaking, the principal channel for rural withdrawal from circulation of currency is withdrawal of commodities. When we are giving attention to the work of withdrawing currency from circulation in rural areas, we need to give extremely close attention to this key link of commodity withdrawal. If one's thinking does not emphasize this point, the work will be off the mark. All facets of Bank of Agriculture work, particularly commodity loan work, should actively support and assist the purchase and marketing work of rural commercial units, both in the prompt procurement of special agricultural by-products and in the prompt supply to communes, brigades, and individual commune members of the means of production and the means of livelihood that they need. When there is a flow of goods, both procurement and marketing burgeon, enlivening the rural economy for a good job in both the circulation of commodities and withdrawal of commodities from circulation.

In addition, the Bank of Agriculture and the People's Bank in all jurisdictions should vigorously organize and support expansion of production by and increasing sources of supply of light and textile industries, and by industrial units making goods used in agriculture. They should make use of economic leverage to impel commercial units at all levels to buttress their thinking about agriculture being the foundation for diligent implementation of the CCP Central Committee's proposal for "priority supply to rural villages" of the means of production and the means of livelihood needed by peasants.

In summary, by correctly handling the relationships among the aforementioned several aspects, in its support to the work of agricultural production, the Bank of Agriculture will be able rather effectively to make the contribution it should make in the readjustment of the national economy.

9432
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TREMENDOUS RAPESEED YIELDS REPORTEDLY ACHIEVED THROUGH SEEDLING TRANSPLANTING

Beijing RENMIN RIBAO in Chinese 16 Oct 81 p 1

[Article: "Sixteen Counties Win Stupendous Increases in Yields as High Yield Farming Techniques for Rape Spread"]

[Text] The Oil Bearing Crop Institute of the Chinese Academy of Agricultural Sciences has guided the spread of high yield farming techniques for rape in some parts of the middle and lower reaches of the Yangtze River, resulting in tremendously increased yields this year from 1,565,200 mu of rape in 16 counties. Total output was 63.5 percent higher than last year, yields per mu increasing an average 21.3 percent over last year. It is estimated that 50 percent of the increased output is attributable to promotion of high yield farming techniques for rape.

Since the fall of 1977 and using Guangqi County in Hubei Province as its starting point, the institute has emphasized demonstrations in the promotion of high yield farming techniques for rape that principally employs transplants of vigorous seedlings. As a result, through year after year increases by about 10 percent in total rape output for the province, yields have risen from 63 jin to 233.4 jin per mu.

Beginning in 1980, the Oil Bearing Crop Institute continued to organize and promote high yield farming techniques for rape primarily through the transplanting of vigorously growing seedlings. They did this in 16 counties in the four provinces of Hubei, Hunan, Anhui and Jiangxi, achieving remarkable economic results. This year, these 16 counties produced 1,565,200 mu of rape for a net increase in rapeseed yields of 24 jin per mu, and a total increase in rapeseed output of 31.93 million jin at a value of 16,763,000 yuan.

During the past several years, the Oil Bearing Crop Institute has conducted large-scale experiments in the rape growing area of the middle reaches of the Yangtze River on rape varieties, time of sowing, seedling heterosis, density, moisture, fertilizer application, and all around high yields, and it has written more than 20 papers on these subjects including "Structure of High Yields for Rape," "Winter Development of Rape" and "A Study of High Yield Techniques for Rape Grown in Central China Wetlands."

9432
CSO: 4007/104

'SHIJIE JINGJI DAOBAO' DISCUSSES AGRICULTURAL DEVELOPMENT

HK150958 Shanghai SHIJIE JINGJI DAOBAO in Chinese No 57, 2 Nov 81 p 2

[Report from Beijing: "The Most Important Measures in China's Strategy for Agricultural Development"]

[Text] "In the past, the erroneous leftist policies of promoting a unitary economic element and an unitary management form were important causes of our failure to achieve rapid development of agriculture in China." In his comprehensive analysis of China's strategy for agricultural development made at a recently held large symposium, Zhan Wu, director of the agricultural economics institute under the Academy of Social Sciences of China, noted that such policies had done great harm. He also called for establishing a structure in which collective ownership holds the dominant position and coexists with various economic elements, management forms and production responsibility systems. This is the most important measures in China's strategy for agricultural development.

At present, our country's academic circles are having lively discussions on issues concerning agricultural development strategy. Zhan Wu has put forward his tentative plan to ensure the realization of the goals in China's strategy for agricultural development.

Respect Proprietary Rights and Self-Management Rights in the Collective Economy. Allow Peasants to Voluntarily Choose a Management Form.

To define the adoption of the collective economy as the principal part of our long-term and stable strategy while actively developing state-operated agriculture and household sideline production and allowing the existence and development of individual farming in given conditions, is of great importance to the strategy for agricultural development. It is also imperative to respect proprietary rights and self-management rights in the collective economy, allow peasants to voluntarily choose a management form, allow the crosswise integration of different types of economies and allow the coexistence of diverse forms.

The coexistence of the public economy and household sideline production for a long period is inevitable. Their coexistence means that they can work in coordination on a reciprocal basis. Household sideline production can play an important role that cannot be replaced by the public economy. We should increase the proportion of household sideline production in agriculture.

Referring to foreign economies, Zhan Wu noted: there are three economic forms among the Soviet Union and Eastern European countries; the economic form with the state-owned economy as its main part (the Soviet Union); the economic form with the collective economy as its main part (Hungary); and the economic pattern with the individual economy as its main part (Poland). Practice has proved that the Hungarian economic form with the collective economy as its main part has achieved better results.

Abandon the Predatory Form of Management and Establish a Good Agricultural Ecosystem

We must conscientiously adopt the viewpoint of an ecological balance in directing all agriculture (including farming, forestry, animal husbandry and fishery) and gradually transform vicious circles into beneficial ones. From a long-term point of view, this approach will be one that is characterized by small investments and greater returns.

We should comprehensively implement the policy on simultaneously developing farming, forestry, animal husbandry, sideline production and fishery. Farmers must completely abandon the predatory form of management, implement the principle of paying equal attention to both using the soil and nourishing the soil, and properly apply crop rotation and reverse cropping. Farmers must also attach importance to integrating modern science and technology with traditional farming and to the integration of organic farming and inorganic farming. By doing so, our country's agricultural development will be characterized by low consumption, low costs and great beneficial results.

Our country's current percentage of forest cover is 50 percent lower than the average world level. It will take great effort to raise China's current 12.7 percent of forest cover to 20 or 30 percent by the year 2000. At present, the crux of the matter is that we must put the stress on planting forests to be utilized as fuel and fast-growing timber forests so as to meet the peasant households' demands for firewood and timber. This is where we can open a speech to terminate vicious ecological cycles. An effective way to quicken the pace at which trees are planted everywhere is to arrange specialized afforestation contracts including contracts made with specialized households for afforestation and forest protection. Those barren hills which the state-run or collective units are unable to open up should be given to commune members as hills for their personal use so as to mobilize every household to engage in afforestation.

Nearly half of our country's pastures have deteriorated due to exceeding the stock capacity and our neglecting the building of pastures. From now on, we must strictly set stock capacity limits, establish a pasture responsibility system or assign pastures for the personal use of commune members.

In our reservoirs, we should develop fish farming and plant water caltrops so that aquatic products can feed on one another.

Our offshore and freshwater fishing resources have suffered astonishing sabotage. The way out for our fishery at present and for quite a long time to come lies in artificial breeding. We must implement the principle of integrating breeding with fishing, with the emphasis on breeding. We must stipulate restricted fishing times and restricted fishing zones so as to protect our offshore fishery.

Readjust the Unitary Ecological Structure of Agriculture. Restore Our Rural Economy's Organic Relationships

On the basis of maintaining a stable increase in the total grain output, we must gradually increase the proportions of industrial crops, forestry, animal husbandry, sideline production, fishery, industry, commerce and transportation in the value of output, the area of land utilized and the disposition of labor. Thus, we will be able to establish a rural agricultural economic structure in which there is a close integration of grain and industrial crops, farming is closely integrated with forestry, animal husbandry, sideline production and fishery, and there is combined development of farming, industry, commerce and transportation.

During the 1979-1980 period, although over 60 million mu of farmland had been switched from growing grain to growing industrial crops or planting trees, the total grain output during this period reached the highest level in the history of the PRC. This has proved that the above-mentioned guiding principles are completely feasible.

We should make use of farming's reciprocal relationships with forestry, animal husbandry, sideline production and fishery in order to quicken the pace of developing agriculture and particularly the pace of developing forestry, animal husbandry, sideline production, fishery and other diversified undertakings. The unified management of the production, the processing, the sale and the transportation of agricultural products is essentially aimed at changing disjointed rules and regulations of the irrational management systems and restoring the dialectical relationships inherent in these sectors of the rural economy. This is a strategic measure to rationalize our rural economic structure and our rural management system.

Restore Our Socialist Agricultural Commodity Economy and Establish Agricultural Products Bases

At present, our country's net agricultural commodity rate is only 30 percent while the average net agricultural commodity rate in developed countries is over 90 percent. Compared with developed countries, we still have a long way to go.

In order to develop commodity production, first of all, in making overall production arrangements, we must gradually realize regional, specialized and intensive management and establish agricultural products bases; secondly, we must devote major efforts to developing a diversified economy and agricultural product processing industries and support the development of specialized households and their integrated units.

The so-called "chopper-whip policy" for purchasing agricultural products—when there are not enough agricultural products, "the whip is used for gathering together enough agricultural products"; if there are too many agricultural products, "the chopper is used for chopping off surplus agricultural products"--has been a great obstacle to the development of a commodity economy. This shows that reforming the circulation system and structure is a task which brooks no delay.

Attach Importance to Investment in Education and Change the Rural Situation in Which Educational and Scientific Levels Are Low and Technological Management Is Bad

To realize the modernization of agriculture, we cannot just pay attention to intensifying labor. What is more important is to pay attention to intensifying technology and scientific knowledge.

Our past neglect of investment in education has had serious consequences. The current educational and scientific levels and the current management standard of the broad masses of commune members and cadres at the basic level are very low. Moreover, 30 percent of our rural youngsters and people who are in the prime of life [aged between 30 and 50], are illiterate. These are great difficulties in developing our rural technological forces.

At present, we must do well in eliminating illiteracy, reform our agricultural educational structure and system and strengthen secondary technical education and the spare-time technical education for peasants.

CSO: 4007/130

GREATER EMPHASIS ON BEAN PRODUCTION URGED

Beijing RENMIN RIBAO in Chinese 5 Nov 81 p 3

[Article by Zheng Zhuojie [6774 0587 2638], Crop Varieties Resource Institute, Chinese Academy of Agricultural Sciences: "Need for Serious Attention to Research About and Production of Edible Beans"]

[Text] All bean crops, with the exception of soybeans, are termed edible beans. Numerous countries in the world and several international agricultural research centers give serious attention to production of edible beans and to the study and use of their germ plasma resources.

In China, edible bean crops are distributed everywhere, and there are numerous types, notably peas, broad beans, adzuki beans, mung beans, kidney beans, variegated string beans, red beans, lima beans, snow peas, cowpeas, bian [565C] beans [a king of kidney bean], small flat beans, goabeans, and yingzui beans [7751 0878 6258] etc. Germ plasma resources for edible beans are also extremely abundant. As early as the 1950's more than 10,000 kinds had been collected. Many superior varieties such as the small red bean from Tianjin and the northeast, the broad beans from Zhangjiakou, the xiangzhu beans [7449 3796 6258] of Jiaxing, the broad beans of Qinghai, the large white kidney beans of Yunnan and Shaanxi, the large black speckled kidney beans of Sichuan and Guizhou, the mung beans of Shandong and Hebei, and the white cowpeas of Anhui, Jiangsu, and Yunnan are famous throughout the country.

Edible beans contain abundant protein and various amino acids required by the human body. Bean stalks have a general protein content of from 8 to 14 percent, more than double that of crops in the grass family. They make a fine fodder for livestock. The roots of edible beans are able to fix nitrogen and function to increase soil fertility. Numerous edible bean varieties may also be used directly as medicines, as is the case with mung beans, which relieve internal heat or fevers, or small red beans which can act as a diuretic, strengthen the kidneys, and reduce swelling.

However, these edible beans so much enjoyed by the broad masses of people have seen a steady decline for many years in the area of their cultivation and in their total output, some valuable varieties being on the border of extinction. One of the main reasons affecting study and expansion of production of edible beans has been that they are said to be "low yield crops." In fact, with just a little improvement in slapdash farming methods, and by giving them the care

they should have, outputs of edible beans can be remarkably increased. Cases in point include usual yields of 300 to 350 jin per mu of broad beans in Qidong County, Jiangsu Province, and yields of from 500 to 900 jin per mu from wide area cultivation of broad beans at the Qugou Farm in Qinghai. In the high and cold region of Qinghai Province and under conditions of extensive [as contrasted with intensive] cultivation, peas produced yields of 200 jin per mu.

In order to satisfy the people's needs and the needs of foreign trade for edible beans, it is recommended that departments concerned and all jurisdictions give serious attention to edible bean production, and strengthen their scientific research in this regard.

First, it is necessary to collect edible bean plasma resources to preserve this precious wealth in order to avoid irreversible losses. China's formerly collected edible bean plasma resources have sustained severe losses, particularly in the Yangtze River basin and in some provinces and regions south of it, where a large portion or some has been lost. In these provinces and regions, collection or supplemental collection must be begun at once.

Second, it is recommended that all agricultural research units appoint specific people or establish special research organizations to perform collection, preservation, study and use work on edible beans and other farm crop plasma resources.

Third, when adjusting crop patterns, production of edible beans should be included in farm production plans. Places accustomed to growing edible beans should revive this production as soon as possible. Agricultural research units in various famous bean growing areas should work together with agricultural production departments to increase production and research on famous local bean varieties.

9432
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PLANTING OF FORESTS TO PRODUCE FRUITS, NUTS, OILS URGED

Beijing RENMIN RIBAO in Chinese 5 Nov 81 p 3

[Article by Luo Yongquan [5012 3057 3123], Chinese Academy of Agricultural Sciences: "Development of Edible Oil Economic Forests"]

[Text] There are a great number of advantages to be had from China's vigorous development of chestnut, walnut, persimmons, dates, tea oil, tung oil, lichees, longans, coconuts, olives, almonds, mulberry, tea, and other food or oil tree forests.

1. No Competition With Grain for Cultivated Land, and Helpful in Solving the Grain Problem

China has a lot of hilly and mountainous land. In the southeast, in particular, the mountain area amounts to 70 to 80 percent of the total. In these areas, water, light, and heat resources are abundant, but the soil is rather infertile, irrigation conditions are rather poor, and they are not suited to the growing of ordinary grain crops. However, virtually everywhere it is possible to grow economic forests for the production of food and oil. For most such fruiting forests [2651 2654], nutrients are abundant, output is high, market value is great, and in some cases, exports from them can earn foreign exchange. According to experiments conducted in Shandong where good care was given, after 7 or 8 years of growth, each mu produced 500 to 600 jin of nuts. From tea oil trees in mountainlands of the south, tea oil yields ranged from 30 to 40 or 80 to 90 jin per mu. In the north, yields from chestnut, walnut, and persimmon trees ranged from 300 or 400 jin to more than 1,000 jin per tree. In the south, yields from lichee, longan, and olive trees also went as high as 1,000 jin or more per tree.

Additionally, food and oil forests also permit intercropping of medium tall or low crops to make full use of space and soil for multiple increases in output. On some sandy stretches in Shandong and Heibei, intercropping of dates and grain was done with no adverse effects on grain yields and an additional harvest of fresh dates. In the south, suitable intercropping of tea oil and rubber forests with tea, peanuts, and various grains might also increase output.

2. Able To Increase Water and Soil Retention To Help Guard Against Drought Disasters

A fundamental way to prevent drought disasters is revival of large tracts of forest vegetation cover. If general methods can be adapted to local situations

for the development of economic forests that produce food and oil, and within which low crops can be intercropped, a combination of soil and water retention and grain production can be achieved, and drought disasters can be reduced.

3. Helpful in Solving Rural Energy Problems

Large-scale development of economic forests that produce food and oil would permit not only the trimming of large numbers of twigs and branches to serve as fuel, but from fallen leaves and weeds methane gas could be produced to help solve rural problems in energy and fertilizer.

4. Great Benefits From Small Investment

In the opening of wasteland to cultivation in marginal areas today, an investment of between 200 and 300 yuan per mu is required, and for the growing of orchards, an investment of only several tens of yuan is required. For the planting of trees in the four besides [beside roads, streams, villages and houses], aside from the saplings, scarcely a single yuan has to be spent. Data from the Yangjiagu Brigade in Qianxi County, Hebei Province for 1978 shows the following net benefit from each yuan of investment in production: 0.96 yuan for agriculture, but 110.24 yuan for growing Chinese chestnuts, the latter being more than 100 times the former.

5. Promotion of Development of Farming, Forestry, Animal Husbandry, Sideline Occupations, and the Fishing Industry

Foreign experience shows that when pasture grass is grown in chestnut forests in a combination of forestry and livestock raising, benefits from the livestock industry are greater than benefits from the chestnuts. Were pasture grass to be planted widely in the coconut groves of Hainan Island after reform, several hundred thousand more cattle and sheep could be raised. Along with an expansion in economic forests producing food and oil can come large-scale development of the beekeeping industry. In most economic forests, the wood is hard. It is fine material for making furniture and for arts and crafts. Some twigs can be used for growing wood fungus and leaves may be used to feed tussah, mulberry silkworms, deer, and rabbits. Tree bark and fruit shells may provide tannin, tannin extract, and such chemical industry raw materials, and peaches, almonds, and gingko nuts are important medicinal materials.

9432
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NEW PLANT GROWTH REGULATOR SUCCESSFULLY DEVELOPED

Beijing GUANGMING RIBAO in Chinese 9 Nov 81 p 1

[Article: "Tianjin Municipality Successfully Develops New Plant Growth Regulator; '784-1' Can Create Large Increases in Yield of Soybeans and Peanuts"]

[Text] Reporter Lu Zingzhi [6424 3237 2655] reports: Tianjin Municipality has successfully developed a new plant growth regulator--"784-1". Seeds of agricultural crops such as soybeans that are sown after being soaked in "784-1" solution can produce a stable per mu average increase of 22 percent in yield; peanuts can produce a stable per mu average increase of from 16 to 26 percent.

This new plant growth regulator was developed and synthesized by the Institute of Organic Chemistry of the Elements, Nankai University, under the personal guidance of Professor Chen Ruyu [7115 5423 3768] and Professor Yang Shixian [2799 4258 0341], honorary principal of Nankai University. With the cooperation of the scientific research departments and related units in Tianjin, Heilongjiang, Liaoning, Shandong, Hebei, Jiangsu, Anhui, and Sichuan, and after 3 consecutive years of repeated field experiments, ["784-1"] was recently confirmed by the evaluation meeting held by the Tianjin Municipal Science Committee.

The regulator "784-1" not only is effective for soybeans and peanuts, but it also produces a relatively good increase in the yield of rape and cotton and other such crops.

9296
CSO: 4007/83

XIYANG COUNTY'S ACHIEVEMENTS REPORTED

HK101030 Taiyuan SHANXI RIBAO in Chinese 18 Nov 81 pp 1-2

[Article by Li Sirong [2621 1835 2837] and Zhao Zhansuo [6392 0594 6956]: "Party Policies Are Good; Xiyang Today Is Better Than Yesterday"]

[Text] /This year the county party committee has paid special attention to grasping four things. It has fully mobilized the enthusiasm of the broad masses of commune members. In a year of a severe drought rarely seen, agricultural, industrial and sideline production has increased on a wide scale countywide. The peasants in large numbers have written poems and chant a verse accompanied with hand claps to praise the party's policies and to express their joy over the bumper harvest./ [passage in boldface]

"Party policies are good. People work hard and the land yields treasure. New ways of earning a living have appeared. Considerable amounts of money are at people's disposal." Today, since the wounds caused by "learning from Dazhai" have healed, the people of Xiyang County enthusiastically write poems and chant a verse accompanied with hand claps to express their joy over their bumper harvest.

This year, agricultural output and harvest in Xiyang have increased on a wide scale. This is the second best year of bumper harvest. According to figures preliminarily verified by the statistical bureau of the county, the total grain output of the county has reached 225 million jin, a growth of 15.4 percent over last year. The total income from agriculture will reach 57.21 million yuan, a growth of 13.5 percent over last year. This year will be the year of the highest distributed income to the commune members since collectivization began.

This year, in exercising leadership over agricultural production, the Xiyang party committee has paid special attention to grasping four things which have received immense popular support.

First, proceeding from a desire to improve the livelihood of the broad masses of peasants as quickly as possible, the party committee has rationally readjusted the composition of grain crops under cultivation. In the past, in "learning from Dazhai," Xiyang took "grain as the key link and corn as the most important crop after grain." The growing of food grains other than wheat

and rice was abandoned. Grave disproportion occurred among the varieties of crops grown. This affected the implementation of the state's plans concerning the purchase of different varieties of grain, and also forced the peasants to consume only one type of grain. The masses said: "Before we had to learn from Dazhai, our livelihood was good. With the launching of the learning from Dazhai movement, every family had to consume a smaller quantity of wheat. When our county became a Dazhai-type one, everyday we had to eat food made of corn flour." This year, in exercising guidance over grain production, the party committee of the county has paid attention to economic effect, put forth the guiding ideology of "the necessity of grasping the output value in addition to grasping the quantity of output," and effected a reduction in the area sown with corn as well as expanding the area sown with rice, wheat, beans and other minor food grains. The production of food grains other than wheat has been greatly boosted, their output reaching 75.6 million jin, an increase of 16.21 million jin over 1978. The quantities of such grains harvested and threshed have been large and their output value has been high. This has not only helped ensure the satisfaction of the peasants' daily needs, but has also helped raise the income distributed by the collective. The masses of commune members have composed the following verse in praise of the food they can enjoy this year: "We can always have rice for making gruel for breakfast. Our lunch made of beans is delicious. Every 3 days we have two meals made of wheat flour. In this way, our daily life is good."

Second, proceeding from a desire to put an end to the situation of "a high output county suffering from poverty" as quickly as possible, the party committee of the county has conscientiously tackled the problem of the high cost of producing grain. In the past, Xiyang one-sidedly went after high grain output. Moreover, egalitarian practices were prevalent. In production, costs were disregarded and huge amounts of labor and funds were employed. Consequently, the growth in production costs far exceeded the growth in grain output. Nominally, Xiyang was an "advanced county" in our country. Actually, it was a "poor county with a high output." This year, aside from vigorously grasping systems of job responsibility in production, the party committee of the county has rectified on a full scale the running and management of the communes and production teams, so that this year the cost of producing grain has rapidly fallen to the lowest level since the "Great Cultural Revolution." This year, the total agricultural investment for the whole county is 9.43 million yuan, a decrease of 2.75 million yuan compared with 1978. The total labor input is 2.28 million mandays less than in 1978. The cost of producing a jin of grain is 4.2 fen, down from the 1978 figure of 5.7 fen.

Third, proceeding from a desire to restore to health and strengthen the collective economy as quickly as possible, the party committee of the county has vigorously promoted the development of a diversified economy. In the past, Xiyang regarded the industrial and sideline production undertaken by the communes and production teams as "capitalism inside the collective economy." These kinds of production were severely criticized, vigorously checked and drastically reduced. Consequently, the diversified economy of the county had been weak and the collective economy of the communes and production teams had been deprived of something essential. This year, the party committee of the county has organized the various units concerned to try all possible means to help the communes and production

teams open up many new categories of industrial and sideline production. Moreover, it has specifically grasped the work of enlivening the channels of production, supply and marketing that exist within the county and between the county and other localities. Diversified occupations have developed vigorously, the value of their output reaching 28.1 million yuan, accounting for half of this year's total income from agriculture and representing a growth of 40.3 percent compared with last year.

Fourth, proceeding from a desire to enable the peasants to become well off as quickly as possible, the party committee of the county has vigorously helped the commune members develop family sideline occupations. In the past, the peasants of Xiyang did not enjoy any freedom or right to undertake family sideline occupations. Although the undertaking of such occupations has been legitimate since the third plenary session of the party Central Committee, people had dared not enthusiastically undertake such occupations because they were afraid of "cutting the tail" of capitalism. This year, the party committee of the county clearly declared that family sideline occupations represent a good way for the commune members to become well off through work. By methods such as ideological mobilization, encouragement by means of appropriate policies, economic assistance, highlighting typical examples for demonstration and so on, the cadres of the county authorities and communes have vigorously created conditions for the development of family sideline occupations. Very marked results have been achieved. This year, the income from family sideline occupations of all the commune members of the county (excluding the value of crops grown on private plots) will exceed 9.43 million yuan. The average income of each peasant from such occupations is more than 42 yuan.

This year, Xiyang achieved bumper harvest under severe drought conditions, which are more serious than the so-called "unprecedented" drought of 1973. From January to May, the total rainfall in the province was only 30.2 mm, a decrease of 10.3 mm compared with the figure of 40.5 mm for the same period in 1973. This year, most of the rivers and reservoirs in the county have run dry and the water levels in deep wells have fallen. Many communes and production teams have found it exceptionally difficult to get potable water for people and animals. Sowing was difficult in 80 percent of the 340,000 mu of plots that had to be sown in spring. Faced with such a serious drought, the party committee of the county complied with the wishes and demands of the masses and established as quickly as possible various systems of job responsibility among the communes and production teams, such as the systems of "one specialist" (specialist units undertaking work), "two links" (linking remuneration to the output of a group and linking remuneration to an individual workers' output), "two responsibilities" (each household being responsible for fulfillment of fixed output quotas, and each household being responsible for task completion), and so on. This greatly helped mobilize the enthusiasm of the broad masses of commune members in combating drought and sowing seeds in the spring. However, in combating the drought and sowing, there was no [word indistinct] as in past years, when "all sorts of containers from all families were used and all people regardless of age or sex went into action together." Nor were there disruptions caused by the aimless stopping of work at factories, shops and schools. Consequently, the work of spring sowing was done even more satisfactorily than in past years. The masses speak the truth: "Linking remuneration to output is like linking our hearts to production. People become intimately tied to the land. They do not take 'a single course of action.' Every family knows how to raise animals and cultivate crops!"

CSO: 4007/130

VIGOROUS DEVELOPMENT OF FRESH WATER FISH INDUSTRY DISCUSSED

Beijing NONGCUN KEXUE [RURAL SCIENCES] in Chinese No 11, Nov 81 pp 1-2

[Article by Cong Ziming [0654 1311 2494] Deputy Director of State Aquatic Products Bureau]

[Text] Following the appearance of the proposal by Comrade Hu Yaobang [5170 5069 6721] at the 88th Central Secretarial Conference of March this year in the newspapers, to set a goal of 4-5 million tons of freshwater fish production in 3 to 5 years, a timely pen-discussion meeting to contribute to strategies for a vigorous development of China's freshwater fishery was launched in the Nos 9 and 10 issues of NONGCUN KEXUE. The discussion amounts to expressions of concern and support for the development of aquatic industries. The scientific arguments and constructive opinions proposed from different points of view by the participants of the pen-discussion will have a positive effect on promoting fish culture.

In this paper, I will also attempt to discuss some viewpoints concerning the possibility of achieving a yearly production of 4-5 million tons of freshwater fishes. On the basis of China's water surface condition, aquatic resources, and fish culture technology, this goal should be entirely possible to achieve, but if we take into consideration the altogether very poor foundation of fishery industry at the moment, the leaders and the masses must undergo a process of ideological transformation and improvement first. There must be a process of reform and reconstruction of the water surface for fish culture, the production of fingerlings, and the sources of feed materials. Even with respect to fish culture technology, a process of popularization and improvement is also needed. Hence, if freshwater fish production is to double during the 6th 5-year plan period and double once again during the 7th 5-year plan period so as to reach the goal of 4-5 million tons the possibility of realization appears to be much greater although the time is stretched several years longer.

I. Viewpoints on The Composing Elements of the 4-5 Million Production

Of China's inland water area of 3-4 hundred million mu, 75 million mu is suitable for fish culture and 16.50 million mu of which is composed of ponds. These ponds are distributed mainly in rural communes and brigades. This portion of the water surface is easily controlled. If the policy is right and the measure is energetically implemented, overall high yield is fully possible. Under the current condition, fish culture in ponds constitutes the most economical and the most easily

materialized part in the development of freshwater fish culture. If all the available ponds are thus utilized, the average production per mu may reach above 300 jin to amount to 2.5 million tons from this item alone.

Fish culture by the family of commune members is a new element following the 11th session of the 3d Plenum of the CPC. According to incomplete statistics of 5 provinces, more than 1 million families are now carrying out this practice and the number is continuously growing. On a rough estimate of 10 million families, with each family raising 40-50 jin of fish, the total will amount to more than 200 thousand tons. There are nearly 60 million mu water surface of lakes, reservoirs, streams, and rivers suitable for fish culture, and if measures are adopted to raise or increase the number of fish raised to produce 30 jin/mu, the total production may reach 900 thousand tons. In the state's plan, 2.1 million mu of commercial fish foundations have been and will continue to be constructed to produce 400 jin/mu, the total will amount to 420 thousand tons. Besides, if natural catches are maintained at the present level, the production will be 300 thousand tons.

When the above items are added together, the total production will exceed 4 million tons. The key to realization of this proposal rests on the quality of work in the future. It is entirely possible to implement the proposal ahead of time.

II. The Need for Carrying Out the Major Items of Work

(1) Further strengthening policy by improving understanding and leadership: Freshwater fish culture has not had the needed emphasis for a long time. There have been many limitations and very few supports. The basic reseason for its not being developed has been a lack of implementation of policy. There has been a great change since the 3rd plenum, however. From the middle of the 50's to the middle of the 60's, the average yearly increase of freshwater aquatic production in the country is 4.5 percent; from the middle 60's to the middle 70's, it is 3.5 percent. The average increase reaches 8.8 percent a year in 1979 and 1980, and it is 10.8 percent higher for 1980 compared with 1979 to create the highest level of increase in history. These facts fully demonstrate that if the leadership is strengthened, it is entirely possible to accelerate the fish production under the guidance of correct goals and policies. The current development in various regions is very uneven, however. The idea and policy of fish production are not yet emphasied in many regions. The condition of allowing areas of water surface to lay waste remains relatively common. Hence, there is a continuous need of liberating the mind to extinguish leftist influence so as to put fishery in its proper place.

(2) Fast extension of science and technology is an urgent job at present. China has had a very long history and a rich experience of fish culture, yet as far as the rural villages are concerned, a minimum level of knowledge of fish production remains commonly deficient. While fish culture development is being rushed at present, it is a very urgent responsibility to deliver the technology to the masses.

Moreover, the 3 great technological problems of seeds, feeds, and diseases remain to be resolved:

a. Good fish seeds are the foundation for developing freshwater fish culture:

The problem of extending good fingerlings should be studied from both aspects of quality and quantity improvement. With regard to quality, some signs of degeneration have appeared in China's domesticated species such as grass carp [Ctenopharyngodon idellus (C. & V.)] blue carp [Mylopharyngodon piceus (Richardson)] silver carp [Hypophthalmichthys molitrix (C. & V.)],Aristichthys nobilis (Richardson), Cyprinus carpio L., Carassius auratus, Parabramis pekinensis (Basil), and Manis pentadatyla, etc. The problem should be tackled scientifically to eliminate the symptoms as well as to find ways of permanent control. Techniques of purification and revitalization should be extended,using rejuvenated parent stock to replace the parent stock of a different locality, preventing old parents from breeding, and hybridization of closely related species as measures to eliminate the symptoms of degeneration, and using systematic selective breeding, research on cultivation of pure breeds, and establishment of pure and improved breed farms as measures to produce permanent control. Moreover, good breeds should be positively introduced to develope heterosis utilization and to extend various foreign varieties of carp, shrimp, etc.

With respect to increasing the quantity, good seed ponds should be constructed and many different ways should be adopted to raise fingerlings. For example, seeds may be collected from the ponds directly, nets and boxes may be placed in a pond to raise seed fish, seed fish may be cultivated in rice paddies, a cove of a reservoir, a fork of a reservoir, a lake, or a stream may be used to raise fingerlings. Wherever there is a problem of obtaining fingerlings, there is a limit in the condition of raising fingerlings, or the supply of fish seeds cannot meet the demand, the system of propagation should be reformed according to the local situation. The cycle of fish culture should be shortened so as to extend the technique of raising fingerlings into edible fish within a single year.

b. To do a good job of feed and fertilizer supply is the material guarantee determining high yield in fish culture. Insufficient feed and allowing fingerlings to grow naturally have for a long time been a serious obstacle in fish production. This kind of practice of wanting the fish to grow well and at the same time to have less than enough to eat just will not do. The speed of growth of fish, the degree of meatiness, and the quantity of yield are determined by the quantity of feed and its nutritional value. In a way, feed is fish and feed means yield. Only when there is a sufficient quantity of excellent feed can a production of 4-5 million tons be hopeful. In Shanghai and Zhejiang, the original fish feed is scientifically processed into a mixed feed to raise blue and grass carps. Good results of fast growth, high yield, and low cost have been obtained in the experimental project. The average yield of fish per mu is about 1000 jin net, amounting to a profit of 300-400 yuan. The problem of feed supply and proper use of feed should, therefore, be instantly resolved scientifically. Multiple ways of planting, raising, gathering, and mixing should all be adopted to resolve the problem of feed materials.

c. Prevention and control of fish diseases form an important key to high yield: With the development of fish industry, the area of fish culture is enlarged, the density increased, and the problem of fish diseases sharpened. Methods of primarily prevention must be studied. Waste and foreign matter must be timely removed to keep the water clean and clear to guarantee the fish pond to be hygienic. If attention is not given to prevention and control of fish diseases, diseases may spread

to destroy a high yield fish pond completely. At present, it is especially important to insist upon cleaning and disinfecting the fish pond, the seed fish, the feed storage, and the tools. The management and sterilization of feed and manure must be standardized to implement the rule of fixed quality, fixed quantity, fixed feeding time, and fixed location for adding feed. Scattering lime or other drugs periodically into the pond may prevent fish diseases and they may also have an early control action if a disease should occur.

There should also be positive research studies on reforming the fish culture system. Fish ponds should be reconstructed adopting scientific measures. Knowledge of fish culture should be regularly popularized to extend suitable and advanced techniques, and train specialists so that the goal of 4-5 million tons of production may be realized sooner.

6248
CSO: 4007/119

CHANGE OF ECONOMIC FUNCTIONS IN RURAL AREAS NOTED

HK140659 Beijing RENMIN RIBAO in Chinese 1 Dec 81 p 5

[Article by Zhou Qiren [0719 0366 0088] and Wang Xiaoqiang [3769 1420 1730]: "On the Changes in the Structure of Economic Functions in the Countryside of Chuxian Prefecture"--note passages within slantlines denote boldface type]

[Text] In the regions implementing fixing output quotas for each household and assigning the households full responsibility for task completion, peasant households have played a more prominent role in their economic activities. Some of the original economic functions of the collective economy have been transferred to peasant households, and some have changed. In addition, some new functions have emerged. In order to study the development and changes in the structure of economic functions in the countryside, we carried out an investigation in Chuxian Prefecture, Anhui Province, which began to practice assigning the households full responsibility for task completion at a comparatively early date.

/What functions has the collective economy transferred to peasant households?/

/1. Directly organizing productive labor./ This includes the arrangements of crops on the contracted land, preparations for production (mechanical and animal power, seeds, fertilizer and farm chemicals), the implementation of technological measures for increasing production, the allocation of labor force in each household for planting and harvesting, the repair and use of machinery and tools and the change and replacement of jobs. The situation in which a few cadres were busy urging the peasants to carry out planting and harvesting has ended. Although agricultural work is still tiring, it is more regular. The economic effect has been raised.

/2. Accumulation./ Public accumulation funds are increasing, and accumulation from peasant households is increasing even more rapidly. In 1980, the peasant households in the whole prefecture purchased 126 large and medium-sized tractors, 1,933 hand-held tractors, 1,926 processing machines, 18 trucks for agricultural use and 25,298 draft cattle. Their reproductive capability has been greatly enhanced. In addition, the surplus funds of the peasant households may be used for investment in the reproduction of the commune and brigade-run enterprises.

/3. Credit./ Bank loans and credit are being shifted to peasant households. Comrades of the agricultural banks in various counties said that the credit of the peasant households was much better than that of the production teams in the past. In the past, loans of 500,000 to 700,000 yuan provided every year by the bank of Ding Yuan County could not be recalled. Last year, a loan of 1.8 million yuan was provided by the bank, and in the same year 1.87 million yuan were recalled (70,000 yuan being an old loan).

/4. Allocation and supervision./ The allocation relations have not only greatly increased the proportion of the total income earned by the peasants from allocation, but what is more important is that they have given the peasants the right to supervise the various expenses of the collective.

Following the development of the economy, some changes and recombination have taken place in some economic functions the peasant households are responsible for. Judging from the tendency that has emerged in Chuxian Prefecture, first, the functions the peasant households are responsible for have changed from "overall" to "specialized." Following the enhancement of efficiency in the plantation industry and the expansion of scope and the increase of items in sideline production, some peasant households have developed into specialized households. The division of specialized work among the peasant households is beginning to perk up. Some peasant households are beginning to undertake highly technological jobs such as breeding, raising seedlings, curing tobacco and carrying out the five rural crafts. In the peasant households, there are special people who are responsible for the breeding of rabbits, pigs, sheep and cattle. This is in preparation for the emergence and development of specialized households in sideline production. Second, on a voluntary basis and under the principle of mutual benefit, large numbers of peasant households have jointly undertaken to run the commune and brigade enterprises that some individual peasant households are not capable of running independently. In addition, following the increase of the surplus labor force and funds of the peasant households, many localities have witnessed the emergence of foodstuffs and oil processing factories, bean-curd mills, hatcheries, small-scale brick-kilns, blacksmiths' and carpenters' cooperatives, small inns, snack shops and the coordinating organizations of plantation and breeding industries. Take Jiashan County as an example. It already has 1,078 fixed integrated bodies participated in by 4,415 households. It has 1,322 temporary coordinating organizations participated in by 9,728 households. The number of peasant households that have joined the above two organizations accounts for 14 percent of the total number of peasant households in the whole county. Objectively, these coordinating organizations of different forms are gradually becoming new economic integrated bodies which have not only the functions that maintain various complex relations with other peasant households and economic units, but also the functions in which plans, management, allocation and accumulation take shape within the integrated bodies from simple to complex forms. Third, agricultural technological branches that cannot be coped with by individual peasant households due to their lack of accumulated experience have increased. In order to receive technological instructions and assistance from the research centers more effectively, the peasant households are beginning to form new relations with them. Along with the emergence of exemplary households in

science and technology and of member households in the peasants' science associations, peasant households' consultancy offices affiliated to the science and technology stations, seed companies, plantation protection companies and agrochemical companies have emerged in the original agricultural scientific system. These two are combined together by means of the responsibility system in science and technology and contracts of science and technology.

/Do we still need the collective after some of the economic functions are transferred? The answer is affirmative./

First, under the prerequisite of adhering to the system of public ownership of land, the functions to allocate, adjust and manage land must be effectively exercised by the collective. It is obvious that in order to protect the public ownership of land, the transfer, renting out and selling and buying of land are prohibited and that the collective must exercise strict supervision and control on building houses and digging ponds privately on the land the peasant households have contracted to undertake. In addition, in order to suit the changes in population and labor force, the collective must carry out the necessary adjustment of land in an organized way.

Second, large agricultural machinery must be used under collective unified leadership because it is too large to be taken on by the peasant households. For the same reason, scattered peasant households cannot privately manage or use water conservancy facilities. Many communes and production brigades have told us that 20-30 percent of civil disputes are caused by contradictions in water conservancy. It is imaginable that water conservancy facilities will be disrupted and the use and management of water will be in chaos if we adopt an attitude of noninterference.

Third, the functions exercised by the collective for the supply of the means of production are indispensable to the peasant households. A certain number of able peasant households can purchase part of the means of production. But when the basic means of production are in urgent need, large-scale supply of selected seeds, chemical fertilizer, agricultural machinery and saplings has to be carried out in a unified way by the collective.

Fourth, the peasant households can carry out small-scale capital construction of water conservancy works. But large and medium-scale structures must be constructed under the overall planning and organizational leadership of the collective. In addition, the collective must undertake the function of resisting certain natural calamities. In the battle against the floods in 1980, Jiashan County was able to gather more than 20,000 people in 1 1/2 hours to consolidate an embankment more than 10 kilometers long. This is something which was beyond the capability of scattered peasant households.

Fifth, the development of commune and brigade-run enterprises, the allocation of labor force, the collection of funds, the planning of production orientation and particularly the repayment of a comparatively high income from industry and sideline production to agriculture must be coordinated within the sphere of the collective to guarantee the internal proportionate development of the collective.

In addition, the indirect economic functions undertaken by the collective are indispensable to the normal progress of social production which includes giving special consideration to households in difficulty, collective welfare, afforestation in large areas, the popularization of new technology, the rapid transmission of market information, the protection of public property, the fulfillment of various contracts and guaranteeing the successful fulfillment of the state plan and the state's purchase tasks. Moreover, following the development of the production of rural commodities and the intensification of multilateral economic relations in society, many new functions which the collective did not have and which scattered peasant households were not able to undertake will emerge. It is necessary to establish new functional departments and institutions to supervise and control new economic integrated bodies formed among different production brigades and communes. This includes supervision and control on taxation and legislation and the enforcement of law in the economic field.

We should understand that the unified carrying out of the above various functions does not mean "eating out of a big pot," nor does it mean the negation of the initiative of the peasant households. It is the prerequisite and guarantee for the smooth carrying out of the economic activities of the peasant households. Obviously, the present transfer of economic functions is partial. It does not mean too, and cannot possibly, turn over all the economic functions to the peasant households. Of course, we must also understand that, following the partial transfer, a change in the contents and form of the functions exercised by the collective will take place. We have to settle appropriately through negotiations the things which were done instantly in the past. This certainly requires us to raise the unified management of the collective to a new level and to change and promote the methods and style of work of the cadres.

The implementation of various forms of responsibility system has caused a new transfer of the economic functions in the rural areas. A new change has taken place in the functional structure in the rural areas. In view of the present situation, some functions are to be turned over to the peasant households, some will be undertaken by the various integrated bodies newly organized by the peasants, some will be undertaken by the state-run or collective economic organizations and some will be undertaken by the commune and brigade-run organizations which are combined with the state organs. How to combine the economic functions, which are differently undertaken according to various levels and which are at the same time each other's prerequisite, into an organic whole is an important problem which needs to be perfected in the responsibility system in the rural areas. Without the coordination of the various functions, there will be no unification of the interests of the state, the collective and the peasants. Therefore, in implementing the responsibility system, we should further consummate the multilevel functional structure in the countryside to promote the development of the productive forces. At present, the contact system which is being extensively carried out in the countryside is an effective method for combining the functions at all levels. Grasping the link and summing up the experience in this respect will be beneficial to achieving the above-mentioned goal.

CSO: 4007/130

CPPCC MEMBERS DISCUSS AFFORESTATION

OW131107 Beijing Domestic Service in Mandarin 1200 GMT 10 Dec 81

[Text] The members attending the fourth session of the Fifth CPPCC National Committee on 10 December held panel discussions on various draft resolutions adopted during the session and discussed the draft namelist for nominating additional vice chairmen and Standing Committee members to the Fifth CPPCC National Committee.

During the past several days, the members also discussed the motion adopted at the fourth session of the Fifth NPC, for a nationwide voluntary tree-planting drive. They held that afforestation and covering the motherland with trees is an important fighting task at present.

In his speech, member Zhang Su said: It is necessary to rely on the masses in afforestation work, and we must have concrete measures. I have been in Yanbei, (Youyun) and (Suxian) areas. Those areas were originally barren mountains of loess plateau. The people there had no fuel and had to use horse dung. The masses started to plant trees in 1952 and afforested over 1.2 million mu of land as of 1956, covering 40 percent of the respective areas. As a result, the weather underwent a drastic change with more rain and less wind and sand. The areas reaped bumper harvests in agricultural production and achieved success in livestock breeding. They have obtained both fuel and fodder. In those places no one cut trees in a wanton manner; everyone took good care of trees.

Member Li Buxin said: During the past several years we saw more damage to forests than nurturing. More trees were dead than alive. Soil erosion is most serious in China's northwest region. Some people have said that the mountains are high, the land is composed of loess, water is inadequate and trees cannot grow well in the region. In fact, they are wrong. We have seen oases in uninhabited deserts. This shows that we can also plant trees on a loess plateau.

Member Xiong Fu said: China's forests have been seriously damaged several times in recent years. According to ancient books, there were many trees in the upper reaches of the Huang He. However, now we can only see a large stretch of barren land. Therefore, the most urgent thing now is to place the work of protecting forests on the daily agenda.

Member Xiong Fu suggested that the state and various provinces and counties set up natural environmental protection zones and tourist zones and unify their management.

Members Shuai Mengqi, Rong Gaotang and Zhu Muzhi proposed that while carrying out afforestation it is necessary to conscientiously practice economy in the consumption of lumber.

Shuai Mengqi said: We should presently correct social customs. Young people want a full room of furniture and to use a lot of lumber when they get married. China has a large population. If everyone wanted to do this, incalculable quantities of lumber would be wasted.

Zhu Muzhi proposed that we could use other materials besides lumber in making paper, including sugarcane dregs and rice straw.

Rong Gaotang proposed that we should prevent peasants from wantonly felling trees. We should first solve the problems of building materials and fuel. He said: In Suzhou Prefecture I saw collectively-built houses. For peasants in this manner, less land is occupied and fewer building materials are used. Each household has a marsh gas pond which helps it solve the problem of power for cooking and electric lights. We should vigorously disseminate this experience.

Li Shaokui and Li Fengen, national model workers, proposed that we conduct education on loving trees for the masses and children.

In their speeches, members from the CYL and the All-China Youth Federation proposed that we carry forward the honorable tradition of youth standing in the forefront of afforestation. Members of CYL units at the central level unanimously agreed to a proposal of setting up a nursery at the Beijing Xishan farm and implementing the nationwide tree-planting drive with concrete actions.

CSO: 4007/130

NPC DEPUTIES PROPOSE LAW TO PROTECT PASTURES

OW112351 Beijing XINHUA Domestic Service in Chinese 0703 GMT 10 Dec 81

[Text] Beijing, 10 Dec (XINHUA)--During a panel discussion, some minority deputies attending the fourth session of the Fifth NPC proposed that the state enact a law to protect the pastures and develop animal husbandry.

Xinjiang deputies Yang Yongqing, Zi Ya and others called on the state to give greater support to the development of livestock breeding and to formulate relevant policies to encourage its development. They suggested that a pastures law be enacted as soon as possible to protect the pastures and guarantee herdsmen's power to make their own decisions. They noted that presently capital construction in animal husbandry was far from adequate. Little money was invested in animal husbandry resulting in a lack of ability to resist natural disasters. So when a natural disaster strikes, large numbers of livestock die. The state should give equal importance to animal husbandry and agriculture, pay attention to improving the pastures, strengthen capital construction in animal husbandry and strengthen the training of scientific and technical personnel for animal husbandry.

Peng Mengyu, NPC deputy from Nei Monggol Autonomous Region, said: Nei Monggol has 1.3 billion mu of grasslands that account for one-third of the country's total grassland area. Utilization of such vast grasslands without paying attention to construction will certainly result in its degeneration. I hope that the state will pay attention to grassland construction and animal husbandry development. Wang Feng, another deputy from Nei Monggol, also pointed out that to vigorously develop animal husbandry production, it is necessary to solve the question of ownership and utilization of pastures. The right to utilization of pastures should be fixed. At the same time, measures should be taken to protect, improve and construct pastures in order to create a material basis for the development of animal husbandry production. Localities in pastural areas should plant trees and grass just as they plant crops. Pastural areas should, of course, take livestock breeding as their main occupation. However, agricultural areas should also vigorously develop livestock breeding so as to increase the total number of livestock, increase the turnover rate of livestock and increase animal products.

CSO: 4007/130

PRC ANIMAL HUSBANDRY DEVELOPS BETTER CATTLE

OW170822 Beijing XINHUA in English 0703 GMT 17 Dec 81

[Text] Beijing, 17 Eec (XINHUA)--Chinese cattle breeders, using frozen semen, have developed 11,000 yak and cattle hybrids on plateaus 4,000 meters above sea level, according to a recent national yak research group meeting in Chengdu, capital of Sichuan Province.

There are 12 million yak on 66.7 million hectares of grassland in the Tiber, Xinjiang Uygur and Innter Mongolia Autonomous regions and in Qinghai, Sichuan, Gansu and Yunnan provinces, accounting for 85 percent of the world's total. The animals are bred at 156 breeding stations by 1,000 technicians.

Hybrid yaks produce between 200 percent and 300 percent more milk and 70 percent more meat on average than ordinary animals. The maturing period of the new breed is also 50 percent shorter, and their value is 50 percent more, the meeting said.

In other animal husbandry developments, herdsmen in the Inner Mongolia Autonomous Region raised an all-time high of 402,000 camels this year, 3.3 percent more than last year, according to the region's animal husbandry department. Camels are raised both for transport and hair. The region's output of camel hair was nearly 1,200 tons this year, 13.3 percent more than last, the department said.

Shaanxi Province also increased its number of mules, horses, donkeys, cattle and sheep this year, said provincial authorities, following three years' consecutive development of animal husbandry. More than 300, 000 drawing animals, 12 percent of the area's total, are raised individually by peasants.

Herdsmen in Nagqu Prefecture, a major pastoral area in the Tibet Autonomous Region, raised 2 percent mroe livestock this year than last despite a rare snowfall. Compared with last year, animal by-products, including wool, butter, mutton and beef, increased between 15 percent and 20 percent.

CSO: 4020/52

BRIEFS

TREE-PLANTING--Beijing, 10 Dec (XINHUA)--At a panel discussion at the fourth session of the Fifth NPC, Ge Shiying, Huang Wenzhong, Qi Dingkuan and four other deputies of the Gansu provincial delegation suggested that efforts made by an enterprise, organ or school in the nationwide tree-planting campaign be regarded as a criterion for rating the unit during the yearend evaluation just like any other economic target. The deputies said all enterprises should organize special teams to plant trees on a contract basis. Some deputies suggested that in areas where the system of fixing farm output quotas for each household has been implemented, quotas for tree planting be also fixed for each household. The deputies maintained that success of the nationwide tree-planting campaign depends on policy as well as on science. They agreed with the State Council's policies on forest ownership, management and funding and on reward and punishment measures concerning the nationwide tree-planting campaign. Some deputies suggested that in promoting the campaign, it is necessary to carry out scientific studies on soil, water heads and climate and on the kinds of trees to be planted. They also maintained that it is necessary to work out tree planting plans according to local conditions. They suggested that once the resolution on the nationwide tree-planting campaign is promulgated, it will be necessary to give it wide publicity, work out concrete plans and do a down-to-earth job in making other preparations, particularly in sampling cultivation. [Text] [OW111429 Beijing XINHUA Domestic Service in Chinese 1305 GMT 10 Dec 81]

CHEMICAL FERTILIZER QUOTA FULFILLMENT--Beijing, 14 Dec (XINHUA)--China's chemical fertilizer industry fulfilled this year's production quota 26 days ahead of schedule, according to the Ministry of Chemical Industry. By 11 December 57.5 million tons of standard chemical fertilizer had been turned out, 1.5 million tons more than the quota. Another 2 million tons are expected to be produced by the end of the year. The Municipality of Shanghai, the Guangxi Zhuang Autonomous Region and Sichuan, Yunnan, Jiangsu, Fujian, Henan, Hubei, Liaoning and Shanxi provinces fulfilled their quotas more than a month ahead of time. Quality of fertilizer was raised and electricity and coal consumption reduced this year. During the first 10 months of this year, 53 million tons of ferilizer were sold throughout the country, 5 percent more than for the same 1980 period. [Text] [OW151231 Beijing XINHUA in English 1354 GMT 14 Dec 81]

CSO: 4020/52

ANHUI DELEGATES DISCUSS ZHAO'S WORK REPORT

OW110433 Beijing XINHUA Domestic Service in Chinese 1651 GMT 8 Dec 81

[Excerpts] Beijing, 8 Dec (XINHUA)--Members of the Anhui provincial delegation to the fourth session of the Fifth National People's Congress have earnestly discussed Premier Zhao Ziyang's report on the work of government over the past several days. The deputies unanimously pointed out: Premier Zhao's report has correctly estimated the present economic situation, laid down adequate principles for economic construction in the future, and scientifically analyzed the prospects for economic advance. The report, which deals with many concrete problems in an all-round way, is very persuasive. While holding panel discussions on the government work report, the deputies from Anhui freely discussed the profound changes in Anhui's economic situation over the past year in close connection with the actual conditions in their own localities and units.

Deputy Meng Fulin said: An unprecedentedly bumper harvest was reported in Anhui Province this year. Meanwhile, an all-round bumper yield has also been registered in agriculture, forestry, animal husbandry, sideline occupations and fishery. The grain, rapeseed, flue-cured tobacco, tea, hemp and fruit output as well as the number of draft animals have also made new records. Great progress has been made in the low-yield areas at an even faster pace. Total grain output from the 13 low-yield counties of Sixian, Wuhe, Lingbi, Guzhen, Dingyuan, Fengyang, Jiashan, Xuancheng, Langxi, Guangde, Huoshan, Shouxian and Changfeng reached 8.1 billion jin, an increase of 26.5 percent over 1980. Farm output in each county rose by an average of 130 million jin. The production growth has also brought about tremendous improvements in the peasants' living standards.

Deputy Gu Zhuoxin said: In developing agriculture, we must strive to develop and increase grain output on a still wider scale. Thanks to the establishment of various systems of responsibility in production, there exists surplus labor in our rural areas. Therefore, while working hard to increase the output from existing farmland, we must also try to make better use of our undeveloped hilly areas, grasslands, rivers and lakes. Anhui Province has great potential in this respect.

Deputies Zhang Dihua and Zhao Minxue said: Judging from the prices of several items basic to everyday life, the market is stable at present. However, prices for such nonstaple foods as vegetables, poultry, eggs and meat have continued to rise.

CSO: 4007/130

ZHANG JINGFU ISSUES WRITTEN REPORT AT NPC

OW131326 Beijing XINHUA Domestic Service in Chinese 1528 GMT 10 Dec 81

[Summary] Beijing, 10 Dec (XINHUA)--"A written report by Zhang Jingfu, NPC deputy and first secretary of the Anhui Provincial CCP Committee, about supply and prices of vegetables, meat, poultry, eggs and other nonstaple food was released at a panel discussion of the Anhui delegation at the fourth meeting of the Fifth NPC.

"Zhang Jingfu said in his written report that there is a vegetable shortage to varying degrees in the eight municipalities under the provincial jurisdiction and vegetable prices have generally gone up. Despite our repeated efforts to solve the problem and although some improvements have been achieved in certain markets, such improvements have been unsteady and the situation as a whole is still very unstable."

Zhang said one reason for the rising vegetable prices is the peasants' ebbing enthusiasm in growing vegetables because growing vegetables nowadays is not as profitable as growing cereal crops and the income from growing vegetables is also lower than that from sideline occupations. Besides, the vegetable acreage is shrinking as certain vegetable plots have been requisitioned for construction projects. Zhang added that vegetable prices have also been heightened by middlemen.

Zhang said that the following measures must be resolutely carried out to balance vegetable production and supply and to stabilize vegetable prices:

1. Expand the vegetable acreage in accordance with the principle of "determining production according to market demand, and production should be slightly higher than the market demand."

2. Financial subsidies for vegetable production will be appropriately increased. Subsidize the vegetable growers' income with part of the profits earned by sideline occupations in various communes and brigades so that the vegetable growers' income will not be lower than that from sideline occupations.

3. Establish a vegetable production and marketing company to eliminate the middle links and increase the vegetable growers' income. The company will sign contracts with various communes, brigades and households and each signatory will be subjected to economic penalty if it violates the terms in the contracts.

"4. Strengthen the market administration, resolutely eliminate the middlemen and strike at the speculators.

"5. The suburban areas must be helped to clearly understand that their main job is to produce vegetables and other nonstaple food for residents in the urban areas, that they must concentrate on producing food by growing more vegetable crops and by developing breeding industry, food processing industry and food service, and that only when these requirements have been met should other sideline occupations be considered."

6. A certain amount of soybean and mung bean will be alloted for making bean products which will be marketed to satisfy demands when supply of vegetables is low.

"Regarding shortage of meat, poultry and eggs, Zhang Jingfu said that this is also a problem caused by raising purchasing prices for cereal crops because raising pigs today is not as profitable as selling grain, raising cattle and breeding rabbits."

Zhang said that supply of pork, poultry and eggs has also been affected by decreasing supply of piglets and sows, inadequate epidemic prevention service and the peasants' increased consumption of food they have produced themselves.

He said: "To deal with this new situation, we have adopted such necessary measures as rewarding pig raising with fertilizer, feed and coupons for industrial goods and as strengthening market administration and taxation work. To insure supply of poultry and eggs, supply contracts will be signed with the producers, who will be given feed and coupons for industrial goods in exchange for their supply of poultry and eggs."

CSO: 4007/130

BEIJING TAKES STEPS TO ELIMINATE GROWING RAT POPULATION

Government-Sponsored Meeting

Beijing BEIJING RIBAO in Chinese 18 Oct 81 p 1

[Article by Wu Yafang [0702 0068 5364]: "At Present, Rodent Pests in the City and Villages Are Becoming More Serious: the City Government Wants To Rapidly Mobilize the Masses To Exterminate Rats, and It Has Been Decided to Carry Out a Uniform Drive To Eradicate Rats on 15 November and 15 March "]

[Text] Yesterday morning the city government held a patriotic health work meeting and emphasized that at present, rodent pests in the city and villages are becoming more serious. It has asked the leadership at each level to rapidly mobilize the masses to do a good job of exterminating rats.

According to statistics of the departments concerned, the average density of the rat population in the city has risen to 5 percent (i.e., the rate of catch per 100 rat traps within a 3-day period)--an increase of two to four times the density in the 1950's. More incidents of rats chewing up clothing, books, food grains, canopes, and stealing food have occurred. The density of rats in some communes and brigades in farm villages is frightfully high. According to surveys of eight wards and counties by the concerned departments, over 90,000 mu of farmland have already been damaged by rodents. Twenty percent of the corn planted in these fields have been chewed up by rodents, with a high reaching 50 percent. In some individual fields, all of the plants have been eaten up. Estimates by Shilou Commune in Fangshan County show that the amount of food grains that will be lost to damage by rodents will be over 90,000 jin.

The city government has pointed out that launching rat-extermination activities is a good way to eliminate pests for the people, prevent disease, protect food grains, and prevent the loss of material and property of the state and the masses. The leadership at each level should fully emphasize the work of exterminating rats, strengthen leadership, train backbone cadres, make the organization sound, propagandize the masses, and praise the advanced. Each ward and county must have leading comrades who will take personal charge. The city government has decided that on 15 November and 15 March next year, the entire city and villages will launch a unified rat extermination drive. This will be carried out every year in the future. Constant rat-extermination work must be done well. The meeting emphasized that regardless of the city or village, everyone must fully emphasize control of rat poisons so as to assure the safety of the people and livestock.

Methods of Extermination

Beijing BEIJING RIBAO in Chinese 18 Oct 81 p 1

[Article by Guo Wen [6753 2429]: "Rodent Damage and Methods of Extermination"]

[Text] Although the rat is small, it causes great damage. It can spread the plague, regional typhus, and other such diseases. It also chews up clothing and books, destroys houses, buildings, and furniture, steals things to eat, and spoils food grains. The Beijing area has more than 10 kinds of rodents. The indoor rat is mainly the big house rat (also called the brown domestic rat) and the small house rat (also called the house mouse). According to research by concerned departments, a big house rat consumes 18 jin of food grains a year. If we add the amount of food grains spoiled by rats, the figure is even higher. Rats have a strong ability to propagate. When conditions are suitable, they can propagate five to eight times a year, and each time they bear about six young. The young rat can reproduce after it is 3 months old. The method of exterminating rats is by rat poison and instruments. The rat poisons mainly in use at present are sodium salts, zinc phosphide, and antu. [Different] poisons are used in different situations. Instruments for catching rats are mainly mouse clips, mousetrap cages, and bowls.

Success in One County

Beijing BEIJING RIBAO in Chinese 18 Oct 81 p 1

[Article by Song Chengming [1345 2052 2494] and Guo Jinwu [6753 4147 2976]: "The Leadership Places Emphasis On Rat Extermination, the Propaganda Is Sufficient, and the Measures Are Effective; Fangshan County's Masses Strike at Rats With Results"]

[Text] Fangshan County has mobilized the masses to implement measures for catching rats manually and for using chemicals and poisons to poison rats, and has launched activities to attack and exterminate rats. The efforts have yielded good results.

Owing to the seriousness of damage by rats, the Fangshan county government held a countywide telephone broadcast meeting to mobilize the people of the entire county to take active measures to strike at and exterminate rats. The county health bureau drew up actual plans for the work of exterminating rats. Each commune also took action. Zhoukoudian Commune not only established concrete rat-extermination measures, but it also allocated funds to buy rat poison to distribute to the basic-level units. It asked each unit to establish special personnel and to place rat poison at fixed localities and at fixed times, and to retrieve the poison at fixed times in order to ensure the safety of people and livestock. Many units in the county also established methods of reward and encouragement in rat extermination. Because the leadership emphasized the work, propaganda was sufficient, and measures were effective, a rat-extermination movement of a mass character has quickly been launched throughout the county. Zhoukoudian Commune exterminated over 2,200 rats within a 9-day period.

9296
CSO: 4007/84

NEW EMPHASIS GIVEN FRESH WATER FISH RAISING

Fuzhou FUJIAN RIBAO in Chinese 22 Oct 81 p 1

[Article: "More than 30,000 Mu Expansion Over Last Year in Raising of Fresh Water Fish in Province; Estimated Increase in Total Output Over Last Year of About 50,000 Dan; Twofold Increase in Number of Rural Households Engaged in Raising of Fish"]

[Text] Statistics from aquatic products departments show that the total area in the province devoted to the raising of freshwater fish this year is more than 575,000 mu, an increase by more than 31,900 mu over last year. Pondfish raising has increased by more than 8,300 mu, and the various kinds of fish are now growing well. Output is estimated as likely to increase by about 50,000 dan over last year's all-time high.

Because of the institution of systems of responsibility, the farflung mountain regions' revival of fish raising in rice paddies has been fairly rapid, this year reaching more than 70,000 mu. At the same time, as a result of liberalization of policies permitting commune members to use vacant land in front of and behind their homes and other odd bits of land for digging small ponds and pools for the raising of fish, household raising of fish has also increased from last year's somewhat more than 5,000 households to more than 15,000 households.

This year's fairly rapid expansion in the province's raising of freshwater fish is largely attributable to leaders at all echelons of party and government having established a mentality of large-scale agriculture, placing expansion of freshwater fish raising on their daily agendas, and taking actions to strengthen leadership. Most of the interior mountain counties in the province have now established county livestock and aquatic products bureaus in which are special sections for the raising of freshwater fish. A strengthening has taken place in freshwater fish raising work in most coastal counties as well. In their freshwater fish production, all jurisdictions have generally instituted a system of responsibility for production providing for quotas, contracting, rewards, and penalties, and the enthusiasm of the masses for raising fish is very high.

Cadres and commune members everywhere have a new understanding, as a result of experience in production, of the economic benefits from the raising of freshwater fish. They generally recognize that the raising of freshwater fish saves labor, saves costs, and saves concentrated feed, producing large benefits. Old fishermen figure that to grow 1 jin of fish costs only one-third to one-half as much for feed as to raise 1 jin of poultry or barnyard animals. Generally speaking, fish raising costs amount to only between 20 and 30 percent of output value.

9432
CSO: 4007/106

TECHNIQUES FOR INCREASING PEANUT YIELDS SKETCHED

Fuzhou FUJIAN RIBAO in Chinese 23 Oct 81 p 1

[Article by Yi Xiuzhu [2496 0208 4554], Tongan County News Unit, and Hong Wolin [3163 2053 6775], Tongan County Agricultural Bureau: "Active and Scientific Production Advances as Tongan County Peasants Summarize This Year's Experiences in Great Peanut Production Increases"]

[Text] One of the major peanut producing areas of Fujian Province, Tongan County, diligently summarized and promoted its experiences this year in scientific farming of peanuts, the county's more than 112,000 mu of spring peanuts thereby producing a bumper harvest with yields averaging 350 jin per mu. Per unit of area yields and total yields increased by 20 percent and 30 percent respectively over last year to reach all-time highs.

This year Tongan County has widely promoted an advanced method invented by the masses called, "three changes and one rotation" (i.e., change to wetlands from drylands; change from sandy soil to soil brought from elsewhere; changing clayey fields by mixing in sand, and rotational cropping from wetlands to drylands). This produced new breakthroughs in peanut production. After 50 mu of clayey fields in Xike Brigade, Cecao Commune were improved, yields reached 360 jin per mu, an increase of 100 jin per mu as compared with similar unimproved fields. From a foundation of improvement in the conditions of production, the entire county also diligently gave attention to the promotion and popularization of superior varieties of crops, again promoting balanced increase in peanut yields. This year the area in the province planted to superior variety Yueyou 551 accounts for two-thirds of the total planted area. The area planted to new superior variety, "Yuexian 58" amounts to 30,000 mu. In the course of promoting and popularizing superior varieties, each jurisdiction used seed peanuts produced last fall that had undergone purification and rejuvenation to heighten peanut disease resistance, thereby improving the quality of the superior varieties and avoiding rotten seeds and getting a full stand of plants.

In this year's peanut planting, all jurisdictions gave extreme attention to planting on time, sensibly close planting, assuring full stands, scientific application of fertilizer, and early and meticulous care as key measures. Since 81 percent of the county's cultivated land lacked phosphate and potash fertilizer, for many years various scientific methods of applying fertilizer have been explored including application of sufficient base fertilizer, increased application of linjiagai

[4340 6905 6862], mixing of seeds in molybdenum fertilizer, and, depending on the field, early application of fertilizer to promote seedling growth or spraying of fertilizer on the leaves during the flowering period. All produced remarkable results. The peasants happily said that this year's great increase in peanut output was the result of enthusiasm plus being scientific.

9432
CSO: 4007/106

BRIEFS

SANMING PREFECTURE GRAIN OUTPUT--A bumper yield of 1.24 billion jin of autumn grain was reported in Fujian's Sanming Prefecture, or an increase of 230 million jin over 1980. Commune masses have also gathered some 10 million jin of grain, other than wheat and rice, from 140,000 mu of farmland. [OW151051 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 11 Dec 81 OW]

CSO: 4007/130

FENG JIXIN REVIEWS CURRENT SITUATION

OW091437 Beijing XINHUA Domestic Service in Chinese 1130 GMT 8 Dec 81

[Excerpts] Beijing, 8 Dec (XINHUA)--The Gansu deputies attending the fourth session of the Fifth NPC warmly discussed Premier Zhao Ziyang's report on the work of the government. The deputies were satisfied with the tremendous and strenuous efforts made by the State Council in the past year to readjust the national economy. Deputy Feng Jixin [Gansu first secretary] described the actual situation of Gansu when he was happily reviewing the excellent situation in China.

He said: The economic situation in Gansu, like the economic situation in the whole country, is steadily improving. In particular, the situation in the rural areas is taking a faster turn for the better. This year Gansu had the worst droughts and floods ever experienced since the founding of the people's republic. However, we have made remarkable achievements in combating the natural disasters because we have seriously implemented the party's rural economic policies and more than 90 percent of the production teams have implemented the system of responsibility with remuneration given according to output, which greatly arouses enthusiasm among the commune members of various nationalities. This year's grain output is estimated to be around 8.5 billion jin. An excellent situation of "ten increases and one decrease" exists in this year of bad natural disasters. The ten increases include an increase of 20 million yuan in total agricultural output value and a 15-percent increase in the output value of diversified economy. They include the increase in the output of industrial crops, with this year's sugar beet output of 190 million jin topping the 1980 output by 50 percent, the output of cured tobacco growing five-fold from 5,000 dan in 1980 to 30,000 dan this year, and an anticipated fairly big increase in cotton production. They include the increase of livestock, with the number of drought animals increasing by 5.6 percent. They also include the increases in areas of afforestation, family sideline production, grain and edible oil procurement, grain and edible oil stock, rural bank savings deposits and sales at village fairs and some of the increases are very big. The decrease is in the sale of grain back to rural areas. As of 10 November, only some 571 million jin of grain were sold back to the rural areas, showing a decrease of some 233 million jin as compared with last year.

Deputy Cai-Dan-Zhuo-Ma pointed out: there is not a unified policy concerning the purchase of animal husbandry products in the pastoral areas. I suggest that from now on we should set a rational quota on the purchase of animal husbandry products in the pastoral areas, just as the grain and edible oil purchase quota for agricultural areas. The quota should be fixed for several years. After the quota is met, the surplus portion should be permitted to sell to the state at negotiated price or sell at markets.

CSO: 4007/130

BRIEFS

DIVERSIFIED ECONOMY CONFERENCE--The Gansu Provincial People's Government sponsored a conference on rural diversified economy on 2 December. Governor Li Dengying delivered a speech at the conference in which he stressed that continuous efforts should be made to do a good job in developing a diversified economy. He noted: the province has suffered from natural disasters this year and from a reduction of grain output, but the output value of the diversified economy has surpassed the 1980 figure by 15 percent. Thus, the total provincial agricultural output value has surpassed the 1980 figures by 11.65 million yuan. The 1981 output value of the diversified economy is expected to reach 46 percent of the annual agricultural output value. In order to further successfully develop the diversified economy, Governor Li Dengying put forward the following points for attention: 1) It is necessary to fully understand the strategic role of the diversified economy in developing the national economy; 2) It is necessary to continuously emancipate minds and ease restrictions in policies; 3) a good job should be done in drawing up plans for the diversified economy; 4) a good job should be done in operating commune-brigade-run enterprises and vigorously developing farm and sideline product processing industries; 5) It is necessary to enliven commodity circulation; and 6) It is necesaary to rely on science and technology to develop the diversified economy. [SK041222 Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 3 Dec 81]

AGRICULTURAL PRODUCTION--Despite natural disasters, Gansu Province is expected to increase agricultural income in 1981. Apart from a 10 percent decrease in grain output, Gansu Province is expected to reap 190 million jin of beets, an increase of 50 percent over 1980, and 30,000 dan of flue-cured tobacco leaves, an increase of 500 percent. The number of livestock increased by 5.6 percent, of which sheep increased 140,00 0 head over 1980. The number of hogs slaughtered increased from 58 percent in 1980 to 62 percent in 1981. Over 970,000 mu of land was afforested. According to a survey in 360 commune households in 12 countries, the per capita income from domestic sideline occupations increased from 56 yuan in 1980 to 70-80 yuan. [SK280342 Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 26 Nov 81]

CSO: 4007/134

EFFORTS URDERWAY TO MAKE UP FOR EARLIER CROP DISASTERS

Yangchun County Winter Crops

Guangzhou NANFANG RIBAO in Chinese 30 Oct 81 p 1

[Article by Li Guanhu [2621 6034 3275], Lan Yuankuan [5663 3633 1401], and Ning Chuansheng [3942 0278 5116]: "Use of Many Ways To Recapture the Losses Due to Disasters; the Area of Winter-Planted Food Crops in Yangchun County Has Doubled Since Last Year"]

[Text] Yangchun County has used policy to mobilize the broad numbers of cadres and commune members to develop enthusiasm for saving production through individual efforts has greatly developed winter planting of food-grain crops, and has made up the loss of the late crop due to disasters. At present, the whole county has preliminarily planted over 342,000 mu of winter crops, with food crops on over 279,000 mu, twice the figure of last year. The large scale and the quick speed have rarely been seen in the past. At the same time, it also fertilized the area around the roots of late rice on over 153,000 mu that had been damaged and soaked.

On 11 October, before the big flood that had occurred only once in 60 years had receded, the county party committee and the county people's government called upon the cadres and commune members throughout the county to take immediate action, and an enthusiastic wave of saving production through individual efforts was launched. Winter planting was grasped as one crop to strive toward the goal of harvesting winter-planted food grains equivalent to an average of 100 jin of rice grains for every member of the farming population of the whole county. To mobilize the enthusiasm of the commune members to plant winter food-grain crops, the county party committee and the county people's government decided to allow the producers to handle their own food grains harvested from winter planting. Winter wheat was allowed to substitute for the food-grain procurement tasks and was allowed to be exchanged for rice, and it could also be sold to the state at negotiated prices. The production teams implementing unified distribution carried out collective winter planting and also were allowed to allocate some land to the commune members for private planting. Surplus land of farms, factories, and mines that is suitable for winter planting but not planted by the units themselves should be loaned to neighboring commune members for planting and should be returned to the units before spring tilling next year.

After the announcement of these decisions, the broad numbers of cadres and commune members throughout the county were greatly encouraged. Many commune brigades again readjusted their winter planting plans, exerted efforts to expand the areas of winter-planted food-grain crops, and thought of many ways to organize winter planting of seedlings and to prepare the land early for sowing.

Lufeng County Winter Planting

Guangzhou NANFANG RIBAO in Chinese 30 Oct 81 p 1

[Article by staff correspondent: "Winter Planting To Make Up for Loss of Late Crop Due to Disasters; Lufeng County Strives To Plant Winter Crops To Produce a Per Capita Average Yield of 100 jin of Food Grains"]

[Text] Facing a situation of serious disaster of the late crop because of typhoons, Lufeng County has decided to grasp tightly food-grain production in this year's winter planting and to strive toward per capita production of 100 jin of food grains in winter planting. At present, the whole county has planted 280,000 mu of winter crops--an increase of 60,000 mu over the same period last year, and constituting 70 percent of the total area of ricefields. Of this area, food-grain crops have been planted on 230,000 mu--an increase of 40,000 mu over last year, and 83 percent of the total area of winter planting.

During the course of implementing the winter planting plan, the county party committee asked each commune and brigade to suit measures to local circumstances, to plant wheat where suitable, to plant sweet potatoes where suitable, and to strive toward planting more and harvesting more. Dongkeng Commune is suitable for planting both wheat and sweet potatoes, but that commune had originally prepared to plant only 950 mu of wheat. Now it has been decided that every person will plant 1 fen of wheat and 1.5 fen of sweet potatoes, so that the area of winter-planted wheat will expand to 2,000 mu. Nantang Commune is situated in the coastal region and is suitable for planting sweet potatoes. Now, winter sweet potatoes have been planted over 13,000 mu--an increase of 2,000 mu over last year.

To ensure the completion of the winter planting plan, each concerned department conscientiously prepared the seeds and fertilizers well. At present, the whole county has checked the warehouse inventory and allocated 2,000 tons of phosphorous fertilizers and over 500 tons of ammonium carbonate as fertilizers for winter plants. The county seed company is preparing to go outside the county to transfer and purchase wheat seed.

Zhanjiang Prefecture Winter Crops

Guangzhou NANFANG RIBAO in Chinese 1 Nov 81 p 1

[Article by He Xiying [0149 6932 3853] and Pang Bingxiang [1690 1629 4382]: "Zhanjiang Prefecture Grasps Winter Planting in a Big Way To Make Up for the Loss of the Late Crop; New Buds of 220,000 Mu of Winter-Planted Crops Emerge"]

[Text] After Zhanjiang Prefecture suffered from flooding, it immediately mobilized the masses and planned ahead, grasping production of winter-planted food-grain crops to make up for the loss of the late crop and to safely tide over next year's spring hunger. Just over 10 days ago, these reporters saw that the fields in the severe disaster areas were still covered with a thick layer of mud. Now, many places have already changed to a coat of green. The newly planted 200,000 mu of wheat, sweet potatoes, and vegetables have now germinated. The whole prefecture is planning and taking action at the same time, and enthusiasm for winter planting is gradually beginning.

The late crop this year in Zhanjiang Prefecture was attacked by torrential rains, flooding 2.8 million mu of agricultural crops. Paddy rice constituted over 1.8 million mu. According to preliminary estimates, the prefecture suffered a loss of about 700 million jin of food grains. After the disaster, many localities suffered from an extreme shortage of food grains. Party committees at each level and the government summarized the historical experience and lessons, and in order not to increase the burden of the state they mobilized the masses to revise the winter planting plan and took measures to encourage the farmers to plant more food grains. At present, the whole prefecture has already planted an area of 2.32 million mu in food grains--more than the original plan by 500,000 mu, and 580,000 mu more than the area of this year's spring harvest. The party committee and the government of Huazhou County proposed "using winter to make up for autumn, and using money to supplement food grains," and launched a campaign to realize a per capita average yield of 80 jin of food grains and 100 jin of cash from winter planting. Now the whole county has harvested 52,000 mu of late rice, planted 32,000 mu of winter crops, and basically realized [the concept of] harvesting one lot and planting one lot.

9296
CSO: 4007/87

IMPROVING LOW-YIELD FIELDS GOAL OF CAPITAL CONSTRUCTION

Guangzhou NANFANG RIBAO in Chinese 1 Nov 81 p 1

[Article by Song Ling [2646 7881] and Jing Dong [2417 2639]: "Insist on Implementing Measures With Less Investment, Quick Results, and Big Gains and Take Improvement of Low-Yield Fields as the Central Task of Capital Construction in Agriculture; Provincial Agricultural Committee Asks Each Locality To Do This Work Well by Allowing the People To Carry Out the Work With Public Assistance"]

[Text] The provincial farmland capital construction command headquarters recently held a provincial field meeting to [discuss ways to] improve low-yield fields in Qingyuan and Xinhui. It clearly pointed out that improvement of low-yield fields should be the focus of the development of agricultural capital construction in each locality.

Du Ruizhi [2629 3843 5347], standing member of the provincial party committee and head of the provincial agricultural committee, attended the meeting and delivered a summary speech.

The meeting pointed out that agricultural production must implement well the eight-point policy centered around readjustment, start out from the present, look at the future, consider the speed of future growth starting now, and create conditions for high-speed development of agriculture. Our province has less land and more people and only by grasping an increase in unit yield and by striving to improve the present low-yield fields over 13 million mu that have an annual yield of below 800 jin per mu, and get them to become high-yield fields of over 1,000 jin during the Sixth Five-Year Plan, can self-sufficiency in food grains be quickly, effectively, and basically realized and can a faster development of diversification be advanced so that farm villages can become rich early. Practice proves that improving low-yield fields require less investment, that the results are quick, that the gains are big, and that this is deeply welcomed by the masses. Since the winter of 1979, through comprehensive control of water, soil, and fertilization, the whole province improved 2.88 million mu of low-yield fields and along with other scientific planting measures, food-grain production generally realized large increases. The smaller increases in the annual yield were nearly 100 jin per mu, while the larger increases in the annual yield were 200 to 300 jin per mu. At the same time, readjustment of agricultural distribution was promoted. Take Foshan Prefecture as an example. Last year, during the course of managing 420,000 mu of low-yield fields, the crop [pattern] was changed to 10,000 mu planted in sugar cane, rotation planting of 20,000 mu of peanuts,

and a 3,800-mu expansion in fishponds. Thus, food grains, oil-bearing crops, sugar, and fish all realized increased yields. Food grains realized an increase of 205 jin per mu; the total yield increased 24.1 percent. The increased yields of these four products produced an income of 13.14 million yuan according to list prices, there was surplus revenue of 7.6 million yuan over the previous year, and the investment by the province and the locality that year was returned.

The [participants at] meeting believed that improving low-yield fields is not some expedient measure but a strategic measure for developing agriculture. The urgent task at present is to implement well the task of reforming the 1 million to 1.5 million mu of low-yield fields this winter and next spring. Improvement of low-yield fields and agricultural zoning must be closely combined, measures must be suited to local circumstances, the achievements of the general survey of the soil and local agricultural zoning must be fully utilized, the favorable situation created after the implementation of the many forms of the production responsibility systems, including major contracts for production in farm villages, must be skillfully utilized, reform of low-yield fields must be carried out in groups and stages according to plan, the guideline of allowing the people to carry out the work with public assistance must be insisted upon, and the capital and materials needed to reform low-yield fields must come mainly from the self-reliance of the masses and communes and brigades in soliciting funds and materials and solving problems themselves. State subsidies should be invested in a key way in the difficult communes and brigades in "old, young, mountain, border, and poor" regions. The contract system must be implemented, the policy of mutual benefits must be thoroughly implemented, and the tasks must be clear. Awards and punishment must be carried out so that improvement in the quality and quantity of low-yield fields can be ensured through contracts that have a legal effect.

9296
CSO: 4007/87

BRIEFS

NEI COUNTY BUMPER HARVEST--This year, Nei County has reaped a bumper harvest of late rice. The 30 communes and townships throughout the county have all increased production. Total output of late rice was some 29 million jin more than in the corresponding period of last year, an increase of 17 percent. Total output of late rice and early rice for this year was 5.02 percent more than last year. This county has increased production for 11 consecutive years. Production this year was higher than in any of the past 11 years. Although the areas sown to early and late rice in this county this year were some 9,000 mu less than before, total output was the biggest. [HK111337 Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 7 Dec 81 HK]

VEGETABLE PRODUCTION CONFERENCE--A Guangdong provincial conference on setting up bases for vegetable and nonstaple foodstuff production in the urban areas of the province recently closed. The meeting stressed: All large and small municipalities should grasp production and supply of vegetables as a major matter and take effective measures to ease the shortage in vegetable supply. The meeting demanded that all municipalities appoint a party secretary or vice mayor to take charge of vegetable supply work and set up special organs to strengthen study and investigations. At the meeting, the provincial people's government also made arrangements for increasing bases for vegetable production and supply of tools and fertilizers in the vegetable growing areas in order to increase vegetable production. [HK021406 Guangzhou Guangdong Provincial Service in Mandarin 2330 GMT 25 Nov 81 HK]

HAINAN AGRICULTURAL PRODUCTION--Hainan Island has seriously implemented the State Council's principles in relation to agricultural development this year and reaped a bumper agricultural harvest. Production in agriculture, forestry, animal husbandry, sideline production and fishing has increased. The island has readjusted its agricultural structure in light of local conditions, stressed production of tropical crops and products, and afforested an area of 300,000 mu. While grasping grain production, the regional CCP committee has taken flexible measures to encourage the peasants to develop rubber production. By now, the region has basically completed the harvest of late crops and major cash crops. According to statistics of departments concerned, grain production this year increased by nearly 100 percent over last year, that of cane sugar by about 500 percent, that of pepper by 400 percent and that of coffee by 300 percent. As a result, the peasants average income has increased by about 40 yuan. In Dongfang County, which is the poorest county in the region, the average distributed income amounted to 86 yuan and showed an increase of 49 yuan over last year. [HK031448 Haikou Hainan Island Service in Mandarin 0330 GMT 30 Nov 81 HK]

AGRICULTURAL ZONING CONFERENCE--The Guangdong Provincial People's Government held a conference on provincial agricultural zoning from 20 to 24 November in Guangzhou Municipality to sum up experiences in agricultural resources investigations and agricultural zoning over the past year and plan agricultural zoning work for the coming year. The conference put forth four basic requirements for agricultural zoning work at the county level. 1. Investigate the situation of agricultural resources. 2. Propose policies which suit the actual situation so as to rectify agricultural structure and preserve the ecological balance. 3. Propose measures which promote agricultural production. 4. Put forth scientific plans for the future. [HK031448 Guangzhou Guangdong Provincial Service in Mandarin 2330 GMT 28 Nov 81 HK]

HAINAN TROPICAL AGRICULTURAL RESOURCES--The investigation of tropical agricultural resources and agricultural zoning work which had been conducted by the State Agricultural Commission, the Ministry of State Farms and Land Reclamation and the Guangdong Provincial People's Government were recently completed. The results of the investigation and zoning work are contained in the report on agricultural zoning in Hainan Island and the report on agricultural zoning in Ledong County, which have now been published. These two reports have some 1.4 million words, were jointly compiled by the State Scientific and Technological Commission, the State Agricultural Commission and the China Association for Science and Technology and provide a large number of scientific data on building large-scale agriculture and maintaining ecological balance in Hainan Island for the comprehensive scientific investigation group. [HK101221 Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 5 Dec 81]

HAINAN ALL-ROUND HARVEST--Hainan Island reaped an all-round bumper agricultural harvest this year. According to statistics of the departments concerned, the year's grain production increased by 140 million jin over last year, pepper production by nearly 40 percent and cane sugar by more than 50 percent. In addition, fruit, rubber, and other production also increased. As a result, the average income of the peasants in the region is expected to increase by about 40 yuan this year. Rubber has been cultivated on some 130,000 mu which is a record; and an area of 300,000 mu has been afforested. In order to enable greater development of tropical crops, the Hainan Regional CCP Committee has adopted various flexible measures to encourage the peasants to grow rubber and other tropical crops. [HK101221 Guangzhou Guangdong Provincial Service in Mandarin 2330 GMT 4 Dec 81]

HYBRID RICE CULTIVATION--According to statistics of certain departments concerned, Guangdong Province has cultivated a total of 5.027 million mu of hybrid rice, showing an increase of 130 percent over last year. Zhanjiang Prefecture has cultivated 750,000 mu of early hybrid rice, and the average yield per mu was 800.89 jin, an increase of 287.9 jin over the regular yield of early rice. Whereas in Shaoguan Prefecture, 1.57 million mu of late hybrid rice was cultivated and the average yield per mu was 657 jin showing an increase of 251 jin over the regular yield of later rice. Hybrid rice production was stable this year despite natural calamities in various parts of the province. [HK101221 Guangzhou Guangdong Provincial Service in Mandarin 2330 GMT 4 Dec 81]

FORESTRY DEVELOPMENT--Party committees and governments at all levels in Guangdong Province have seriously implemented the Central Committee's and the State Council's decision on forestry development and have worked hard in formulating measures for forestry production development and issuing forestry certificates to peasants. Up until now, 70 counties and municipalities in the province and 1,053 communes have extensively launched work in stipulating rights to occupy forests. Some 66,200 production teams have completed this task, issued certificates to peasants and signed agreements with them. Most of the communes and brigades have formulated measures to protect forests and plans to develop forestry. According to statistics, the province has already settled 20,184 disputes over occupation of forest areas, and each commune member occupies an average private mountain area of 8.7 million mu [as heard] and the forestry production responsibility system has been practiced in a total area of some 22 million mu. [HK081129 Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 3 Dec 81]

SHAOGUAN PREFECTURE AGRICULTURAL HARVEST--Shaoguan Prefecture in Guangdong Province has reaped a bumper agricultural harvest this year. Production of late rice is expected to increase by some 70 million jin, and the total rice production, including early rice, is expected to increase by 150 million jin over last year. Except for Renhua County, the other 12 counties in the prefecture have increased production to a varying degree. Production of beans, fruit, cane sugar, sweet potatoes, and so on has also increased. While encouraging the peasants to increase production, the Shaoguan Prefectural CCP Committee has helped the masses to practice scientific farming. [HK081129 Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 3 Dec 81]

CSO: 4007/134

NPC DEPUTIES EXAMINE ZHAO WORK REPORT

OW120541 Beijing XINHUA Domestic Service in Chinese 1723 GMT 8 Dec 81

[Excerpts] Beijing, 8 Dec (XINHUA)--The Guangxi Zhuang autonomous regional delegation to the fourth session of the Fifth NPC has conscientiously examined Premier Zhao Ziyang's government work report. It agreed that the report is realistic in its analysis of the situation, completely right in laying down the 10 principles for economic construction and well-grounded in laying out the prospects for China's economic development.

The deputies said: Premier Zhao's analysis of the current economic situation conforms with Guangxi's conditions. In agriculture, Guangxi has criticized and corrected the "left" guiding thought in rural work, gradually established and perfected the agricultural production responsibility system in its various forms and carried out systematic readjustments in agriculture's internal structure. Despite repeated serious floods in some major grain-producing areas this year, total grain output is still expected to near the 1980 level, the highest annual output on record. Output of the various cash crops such as sugarcane, fruits, peanuts, jute, ambary hemp, tea, mulberry and silkworm cocoons has increased. Rural peasants' income derived from the collective plus the income from household sideline production may amount to 170 yuan per capita. Because of readjustments in industry's internal structure and the production of goods according to the needs of the market, the people's livelihood and exports, the total industrial output value from January to October topped the same period last year by 3.59 percent.

In their discussion, the deputies also voiced their opinions and suggestions. Deputy Shi Zhaotang said: To develop industry, we also need to rely on policy and science. In industrial production, our experience and lesson over the years show that neither policy nor science has received attention, that complete sets of equipment have been imported in large quantities solely on the basis of subjective speculation, that factories have been built without considering the availability of raw and semifinished materials and that products have been manufactured regardless of market needs. These things should not be allowed to continue.

Deputy Du Yi said: Rural areas have undergone tremendous changes since the implementation of the production responsibility system. Under the new circumstances, rural work is not concerned with production and distribution, but also with circulation and consumption. I suggest that an economic contract law be promulgated as soon as possible to ensure smooth channels for the purchase and marketing of commodities in rural areas and help the peasants find new ways to develop a diversified economy.

The deputies also pointed out that it is necessary to pay attention to developing intellectual abilities and increasing educational and scientific research funds. In the future, it is necessary to build more schools for teachers, train more teachers and raise their teaching standards.

The deputies also suggested that the CCP Central Committee and the State Council render the full support needed by Guangxi so that the autonomous region can exploit its production advantages, achieve economic self-sufficiency and make more contributions to the state.

CSO: 4007/130

BRIEFS

DIVERSIFIED ECONOMY--Nanning, 14 Dec (XINHUA)--Guangxi Autonomous Region has overcome the aftereffects of natural disasters and reaped a bumper harvest of cash crops. The region's cane sugar output is expected to exceed 500,000 dun, topping the last cane-pressing season by some 20 percent. Total output of tropical and subtropical fruits will surpass 5 million dan, about 22 percent increase. Total output of tobacco reached 700,000 dan, up 65 percent from last year. Output of tea, mulberry-silkworm cocoons and tung oil rose by 17, 38 and 10 percent respectively. This year the region afforested more than 2.7 million mu of land, topping last year by more than 130,000 mu. The number of hogs in stock topped last year's figure by 7 percent. Freshwater fish output topped last year by 7 percent. [OW201355 Beijing XINHUA Domestic Service in Chinese 0052 GMT 14 Dec 81]

YULIN WINTER SOWING--Yulin Prefecture has strengthened leadership over winter sowing. As of 25 November, the whole prefecture had sown flue-cured tobacco, winter beans, wheat, green manure, and so on, on some 832,200 mu. In the wake of implementing the production responsibility system, the peasants in Yulin prefecture have been very enthusiastic to grow crops and increase the economic benefits. In order to meet the demands of the peasants, the Yulin Prefectural CCP Committee held a meeting in mid-October to sum up experiences in reaping a bumper harvest of [word illegible] last year. [HK081129 Nanning Guangxi Regional Service in Mandarin 1100 GMT 3 Dec 81]

CSO: 4007/134

DEPUTIES DISCUSS PREMIER ZHAO'S NPC REPORT

OW102343 Beijing XINHUA Domestic Service in Chinese 0708 GMT 8 Dec 81

[Excerpts] Beijing, 8 Dec (XINHUA)--The Guizhou deputies attending the NPC meeting warmly discussed Premier Zhao Ziyang's report. They generally felt inspired after listening to it. Many deputies said that China's current economic situation is indeed good.

Zeng Xianhui, Zhang Junzhi and other deputies said: agricultural production has generally increased in China this year, despite many places being hit by bad drought, floods and other natural disasters. Guizhou Province this year encountered the worst drought in the past 60 years. However, since we have implemented the system of responsibility in agricultural production and made great efforts to develop a diversified economy, only the grain output slightly decreased, while the production of industrial crops increased. We have gathered some 600 million jin of rapeseed and 2 million dan of cured tobacco, both being an all-time high.

The deputies pledged to unite as one, work hard under the correct leadership of the CCP Central Committee and the State Council, seriously implement the principles and tasks set forth in the report, and strive to make Guizhou's economic construction a success.

During the discussion, the deputies also made some comments and suggestions.

Deputies Su Gang, Li Zhiqi, Tu Guangzhi and Xu Jiansheng said: We completely support the correct proposition on simplifying the administrative structure in Zhao Ziyang's report. This is an important task in implementing the ten principles and a very difficult one. We hope that the State Council will work out specific measures.

Deputy Tu Guangzhi said: The State Council now has 108 departments. This situation does not exist in other countries.

On how to successfully simplify the administrative structure, Deputy Su Gang suggested: The State Council should be determined to legislate cadres' retirement regulations.

CSO: 4007/130

LETING COUNTY HAS BUMPER RICE HARVEST ON RECLAIMED LAND

Shijiazhuang HEBEI RIBAO in Chinese 18 Oct 81 p 1

[Article by Wei Zhaowen [7614 0664 2429], Ren Shaoliang [0117 4801 5328], and Gao Yuzhuang [7559 3768 1104]: "Saline and Alkaline Waste Beaches of the Past Are Now Filled With the Fragrance of Rice; 160,000 Mu of Paddy Rice on the Coast of Leting Yield Bumper Harvest"]

[Text] During the past 2 years, the farmers in Leting County [Tangshan Prefecture] have carried out large-scale reclamation activities on the beaches of the Bohai. They have already converted 160,000 mu of waste beaches into ricefields, and this year they can harvest about 100 million jin of rice grains. Just this item alone will increase the income of the farmers of the whole county by over 20 million yuan.

Leting County's coastline has a wide expanse of waste beaches. In the past, because of leftist control and deficient water sources, the land was not fully developed. Some communes and brigades did not have enough cultivated land, and the life of the farmers was difficult. After the Third Plenum of the 11th Party Central Committee, the county's concerned leadership liberated their ideology, established a command headquarters for reclaiming ricefields, conducted detailed surveys and analysis of the soil texture of the coast and the water resources and other such natural conditions, and immediately established a 4-year plan for reclaiming ricefields when the Luanhe Reservoir would be completed and would begin to supply water. Last year the broad ranks of commune members reclaimed 100,000 mu, harvested over 50 million jin of rice grains, and increased their income by 10 million yuan. This year the communes and brigades sent over 10,000 laborers to the ricefields, and over 4.6 million man-days were invested. The 160,000 mu of ricefields still realized a big harvest, although drought and a shortage of water occurred after a cold spring and considerable wind this spring. Some of the production teams along the coast that had a per capita average of over 4 mu of ricefields became rich first. The natural conditions of the Wangan production team of the Caizhuang Brigade of Wangtan Commune are poor, and they have been poor for many years. Last year, 120 mu of ricefields were planted, the daily work points were worthy only 4 jiao, and the per capita distribution level was 60 yuan. This year they planted 330 mu of rice which can produce 200,000 jin of rice grains, the daily work points are worth 3 yuan, and the per capita distribution level is more than 300 yuan. The income from developing ricefields throughout the county includes that from rice grains and sideline products and from the planting of reeds and from fish culture with an income of 5 million yuan. The overall total is 25 million yuan--more than the annual amount from the sale of food grains of the past 2 years.

9296
CSO: 4007/84

COMMUNE MEMBER'S CHICKEN-RAISING METHOD EMULATED

Shijiazhuang HEBEI RIBAO in Chinese 23 Oct 81 p 2

[Article by Zhang Wenguang [1728 2429 0342]: "Shijiazhuang Prefecture Actively Popularizes Wang Fugiu's [3769 4395 4428] Experience in Raising Chickens; the Whole Prefecture Already Has Over 2,000 Commune Member Families Using Wang Fugiu's Chicken-Raising Method, Which Has Promoted the Development of the Chicken-Raising Business; Total Number of Chickens Raised in the Whole Prefecture Has Increased by 1.41 Million Over the Same Period Last Year"]

[Text] Since the beginning of this year, the livestock departments at every level in Shijiazhuang Prefecture have actively popularized the experience of Wang Fuqiu [3769 4395 4428], of the Dongsanzhuang Brigade of Xisanzhuang Commune in the suburbs of Shijiazhuang Municipality, in raising chickens. This effectively advanced the chicken-raising business throughout the prefecture.

The greatest problems commune members have had in raising chickens are, first, that the chickens do not lay eggs in the winter, and second, that chicken diseases are difficult to treat. Wang Fuqiu's experience in raising chickens has solved these two problems. From this spring to the present, many cadres from the counties and communes of Shijiazhuang Prefecture have visited Wang Fuqiu to seek his advice. Many commune members have also come to observe and learn his actual experience. Some counties have printed the Wang Fuqiu's experience in small pamphlets and distributed them to commune members. Some counties have held special lecture classes on the experience of raising chickens by Wang Fuqiu. To help commune members build chicken coops and chicken cages well, the counties of Pingshan, Jingxing, Shenze, and Zhaoxian also have provided commune members with bricks and tile, wood, cement, bamboo poles, and feed processing. The livestock departments of the prefecture and the counties also have actively introduced superior breeds of chickens to help commune members select and keep superior breed chickens, increased the purity of the chicken colonies, and thereby increased the amount of eggs laid and the weight of the eggs.

According to incomplete statistics, in the several counties surrounding Shijiazhuang there are already over 2,000 families of commune members using Wang Fuqiu's chicken-raising method, and the rapid development of the chicken-raising business has been advanced. The total number of chickens raised in the prefecture has now reached 9.61 million--an increase of 1.41 million over the same period last year. When the broad ranks of commune members evaluated Wang Fuqiu's experience, they said: The method is simple, it is easy to do, it does not cost much, and the gains are high.

9296
CSO: 4007/84

UTILIZE UNDERGROUND WATER IN HEBEI PLAIN RATIONALLY

Shijiazhuang HEBEI RIBAO in Chinese 24 Oct 81 p 2

[Article by Chen Wanghe [7115 2598 0735], engineer at the laboratory of the Hydrogeological Department of the Provincial Geology Bureau: "Suggestions on Rational Exploitation and Utilization of Underground Water in Hebei Plain"]

[Text] The Hebei Plain has an area of 72,000 square kilometers, constituting about 40 percent of the total area of the province. The population is about 36 million, which is about 72 percent of the population of the whole province. Our province's cities and industrial regions are mostly concentrated in the plain. The supply of underground water in our province comes mostly from ground-surface water as the major source of water supply. How to rationally exploit and utilize underground water has important significance in developing our province's national economic construction.

The underground water in the Hebei Plain is deposted mainly in the loose sand strata and the gravel strata 350 meters to 550 meters deep. These can be divided from top to bottom into four water-holding groups. The underground water in the Shangian Plain north of the line from Bengcheng to Yutian and west of the Anci-Sulu-Feixiang line is freshwater, and covers an area of about 31,000 square kilometers. The rest is salt-water regions. A saltwater body (mineralization of underground water greater than 2 grams/liter) from 50 to 150 meters thick lies on the ground surface or 10 to 30 meters below ground surface. A shallow layer of freshwater with mineralization less than 2 grams/liter above the saltwater body covers 18,400 square kilometers. Of the total amount of underground water resources, the total deposit of freshwater in the Shanqian Plain is about 7.15 billion cubic meters, or one half of the total resources, while the shallow layer freshwater in the saltwater region constitutes 22 percent of the total amount of the resources.

In recent years, as industrial and agricultural production has developed, the amount of exploitation of underground water in the plain has increased day by day. In 1975, the amount of underground water exploited totaled 8 billion cubic meters. In 1980 this increased to about 11 billion cubic meters. Because our province has suffered from drought year after year, the underground water level of almost half the region has dropped. Comparison of the water level in 1980 and 1975 shows that generally it has dropped anywhere from 1.5 meters to 5 meters. At present throughout the whole plain, relatively large drops in the underground water level and underground funnels have occurred at over 30 places covering an area of over 10,000 sqaure kilometers--one seventh of the total area. In many funnel areas, especially in areas of deep-layer water funnels, overexploitation has occurred, causing the funnel water levels

in many regions--such as the Shanqian Plain south of Shijiazhuang, and the Chang, Ji, Zao, and Heng areas in the Heilonggang region--to drop over large areas; exploitation has been difficult. Sinking of the ground surface at the central regions of some funnel areas has already occurred. For example, Changzhou Municipality's ground surface has sunk 200 millimeters since 1971.

The area of the shallow layer of saltwater in the Heilonggang region (saltwater region) constitutes 55 percent of the total saltwater area. Because saltwater conditions were not improved, underground water resources have not been fully utilized, especially because slight saltwater directly and indirectly affects the comprehensive control of drought, waterlogging, salinity, and alkalinity. The deep strata of the eastern part of the Hebei Plain contain alkaline freshwater. In recent years, underground alkaline freshwater has been used mostly for irrigation of farmland. This has already caused alkalization, the soil has become hardpan, and the seedlings have died, causing reduced yields in varying degrees. At the same time, because the fluorine content of the underground water of that region is one to two times over the health standards, residents who drink underground water with a high fluorine content have suffered varying degrees of poisoning.

If the above problems are not solved by corresponding measures, the development of industrial and agricultural production will be seriously affected and the people's life and physical health will be endangered--[developments] unfavorable to the construction of the four modernizations. Because of this, the following suggestions for the exploitation and utilization of underground water in the Hebei Plain are proposed:

1. There is limited sideways or vertical overflow replenishment of freshwater in deep layers of the region where saltwater is distributed. The present exploitation of underground water has already reached between 1.5 billion and 1.6 billion cubic meters/year, overexploitation is serious, and in general we cannot continue to expand exploitation. As the saltwater is improved and utilized, and as the freshwater in the deep layers being exploited.

Replenishment conditions have become poorer as the depth of the freshwater in the deep layers of the eastern plain increases. Therefore, we should limit large-area exploitation and utilization of the underground water of the third water-holding group (at a depth of over 250 meters below ground surface) as soon as possible. When exploiting and utilizing alkaline freshwater in small areas or at scattered places as a water source for irrigation, we should consider mixed irrigation, using nearby saltwater with mineralization of less than 5 grams/liter and freshwater in the shallow layers, or take the necessary agricultural measures to reduce alkalinity so as to reduce the damage to crops. When it is used as a source of drinking water, we should carry out various measures to elminate or reduce fluorine so as to assure the people's health.

2. The underground water in the all-freshwater region of the Shanqian Plain has a good replenishment condition, and the underground water resources are rich. At present, although the actual amount of exploitation of underground water in that region has reached over 80 percent of the underground water resources, exploitation is uneven. Some counties in Baoding and Tangshan [prefectures] have a potential for exploitation, and exploitation should be expanded and the ground-surface water in these regions gradually transferred to the low plains. The amount of exploitation in Handan and Xingtai prefectures in the Shanqian Plain has basically approached the amount of underground water resources, and overexploitation has already occurred

in some places. Exploitation of underground water there should be reasonably controlled, underground water hidden in karst formations should be appropriately exploited, and artificial replenishment of underground water resources should be carried out in col regions and in regions of developing river channels.

3. In areas of shallow layers of slight saltwater in the saltwater regions, measures of mixed exploitation with deep-layer freshwater or direct utilization of shallow layers of slight saltwater should be implemented. Exploitation of water in shallow layers should be expanded to solve the difficulties of a deficiency of water resources in this region.

4. At present, exploitation and utilization of underground water in the Hebei Plain lack unified scientific management to varying degrees, the technical and economic conditions of underground water exploitation are not emphasized, and nobody has paid attention to the study of well types and well structures. It is suggested that the provincial government and the concerned departments realistically strengthen their leadership, establish special agencies, and implement unified scientific management so that the limited underground water resources can be rationally exploited and utilized.

9296
CSO: 4007/84

BUMPER SOYBEAN HARVEST REAPED

SK121030 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 11 Dec 81

[Text] According to our reporter (Jiang Demin), many counties, communes and brigades in Heilongjiang Province have reaped a bumper harvest of soybeans this year notwithstanding serious natural calamities. Hailun, Nehe, Bin and Bayan counties have respectively harvested 100 million jin of soybeans. Since the third plenary session of the party Central Committee, the state has raised the procurement price of soybeans, thus greatly mobilizing peasants' enthusiasm in developing soybean production.

This year the province sowed 26.84 million mu of soybeans, an increase of 2 million mu over last year. Because soybean-producing areas have implemented the responsibility system in production, developed improved varieties of soybeans, applied more farm manure and chemical fertilizers, strengthened farmland management and adopted measures to prevent insect pests and serious weed growth, the province has reaped a relatively good soybean harvest even though 6.4 million mu of soybean fields were damaged by floods and waterlogging.

In Nenjiang, Suihua, Heihe and Songhuajiang prefectures and in five state farms in the western part of the province, total soybean output increased 15 percent over 1980. The agricultural technology station in (Tanrong) commune in Bin County has contracted for some 10 mu of soybean fields and the per-mu yield of these fields reached 518 jin, a provincial record. Qingan County plans to market 95 million jin of soybeans and each peasant will earn 120 yuan from soybean sales.

This year Zhangye County sowed soybeans on fi-lds which were expanded to grow corn a few years ago and proved a failure. The county sowed 557,000 mu of soybean and marketed 100 million jin to the state. Per-mu yield averages 253 jin. At present, soybean-producing areas in our province are transporting soybeans to state warehouses. Hailun and Nehe counties have already delivered 110 million jin each to the state. Many other communes and brigades continue to deliver soybeans to the state.

CSO: 4007/130

BRIEFS

SOYBEAN OUTPUT--Hailun County, one of the important soybean producing counties in Heilongjiang Province, has a good harvest this year. By 5 December, the county had sold 110 million jin of soybeans to the state, an increase of 63 million jin over the 1980 figure. The county increased the acreage for soybeans from 552,000 mu in 1980 to 743,000 mu this year and made intensive efforts to popularize new farming techniques. Consequently, the average per-mu output stood at 250 jin, a 40-percent increase over the 1980 level. [SK101123 Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 9 Dec 81 SK]

PREFECTURAL-LEVEL AGRICULTURE--Agricultural production has rapidly progressed this year in Suihua Prefecture, Heilongjiang Province. Agricultural output has surpassed that of 1980, and output of sugar, oil-bearing crops, tobacco and flax has set a record. Prefectural income from agriculture and sideline production exceeds 1 billion yuan. Per capita distribution will be over 120 yuan. [SK170708 Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 15 Dec 81]

CSO: 4007/134

BRIEFS

AGRICULTURAL TECHNOLOGY--Over the past few years, Henan Province has done well in popularizing agricultural technology. Some 2,027 agricultural technology popularization stations have been built and the number of personnel engaged in agricultural technology popularization has been increased to 8,059. As a result, production of agriculture, forestry, animal husbandry, sideline occupation and fishery has increased. [HK101221 Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 4 Dec 81]

GRAIN, OIL PROCUREMENT--Zhengzhou, 9 Dec (XINHUA)--Henan Province reaped a bumper agricultural harvest this year. As of the end of November, the province had procured 5.57 billion jin of grain and 245 million jin of edible oil. [OW201335 Beijing XINHUA Domestic Service in Chinese 0055 GMT 9 Dec 81] As of 30 November, Henan Province had fulfilled this year's grain procurement quotas by 1.3 percent. [Excerpt] [HK101221 Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 4 Dec 81]

COUNTY DEVELOPS DIVERSIFICATION--Xin County has taken such measures as are suitable to local conditions to develop diversification. The county has some 86,000 mu of tea, chestnuts, bamboo, teaseed oil, fir, day lily and tong trees. The county's output of tea this year exceeded 1 million jin for the first time, 49.1 percent more than last year. Total output of chestnuts was 4.45 million jin, a record. The county earned 2.45 million yuan from diversification. The per capita income this year was some 17 yuan more than last year. [HK081129 Zhengzhou Henan Provincial Service in Mandarin 1130 GMT 3 Dec 81]

WHEAT TENDING CIRCULAR--The Henan Provincial People's Government has issued a circular on strengthening the management of winter wheat fields and ensuring wheat seedlings remain healthy through the winter. The province has completed wheat sowing. The current problem is that the temperatures are low and wheat seedlings are growing slowly. Since the middle of September, the province's average temperatures have been 2 to 3 degrees lower than those in normal years, resulting in wheat seedlings growing late and slowly. Leaders at all levels must pay close attention to this problem. Temperatures are now gradually going down and it is essential to strengthen the management of winter wheat fields. [Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 28 Nov 81 HK]

AGRICULTURAL HARVESTS--Zhengzhou, 28 Nov (XINHUA)--Henan Province this year reaped good agricultural harvests. The province this year produced more than 45 billion jin of grain, an increase of some 2 billion jin over 1980. In 1981, it registered a 44-percent increase in soybean output, a 47-percent increase in rapeseed output, an 85-percent increase in tobacco production and a 75-percent increase in sesame output compared with 1980. While its cotton output this year is slightly lower than last year's, 1981 wheat production is 3.3 billion jin more than last year. The total agricultural output value this year is estimated to be 11.5 billion yuan. [OW041341 Beijing XINHUA Domestic Service in Chinese 0737 GMT 28 Nov 81 OW]

CSO: 4007/130

BRIEFS

NEW COTTON STRAIN--A new cotton strain, "Hubei No 11 cotton", has been successfully bred in Hubei. It has been studied and cultivated by the scientific research workers of the Institute of Cotton of the Provincial Academy of Agroscience, and has been trial-cultivated in an area of 25 mu of cotton fields in Mianyang, Qianjiang, Xingcheng, Huangpi, Wuchang and Guangji counties. The average production of this new cotton strain is 125 jin per mu, 17.1 percent more than the original strain of cotton. Affirming the achievement of this project, the experts held that the new cotton strain "Hubei No 11 cotton" could be cultivated in the cotton fields throughout the province in accordance with the local conditions. [HK081129 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 3 Dec 81]

ENSHI PREFECTURE BUMPER HARVEST--Enshi Prefecture has reaped an overall bumper harvest after 2 years of natural disasters. It set records in seven aspects: 1) output of grain, which amounted to 2.3 billion jin, 500 million jin over last year; 2) output of the diversified economy; 3) procurement of agricultural sideline products; 4) average income of peasants, which is 220 yuan, 100 yuan over the record of 1978; 5) financial income; 6) repayment of loans in the rural areas; and 7) peasants' saving accounts. At the end of November, the saving accounts of peasants all over the prefecture amounted to 18 million yuan, which was an increase of 100 percent over 1980. Enshi Prefecture was able to reap an overall bumper harvest because the party organizations at all levels had eliminated the leftist influences and were resolute in implementing the policies and principles stipulated at the 3d plenary session of the 11th CCP Central Committee. The peasants were encouraged to practice the production responsibility system and implement the diversified economy. [HK180328 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 8 Dec 81]

COUNTIES PIG PROCUREMENT--Tongcheng, Yunxi and Zigui counties in Hubei have fulfilled pig procurement quotas ahead of schedule. The Tongcheng County People's Government has attached great importance to pig procurement work. Work teams were sent to the grassroots to help fulfill the procurement quotas. Up to the end of November, the province had procured some 26,500 pigs and fulfilled pig procurement quotas for the month ahead of schedule. The cadres and peasants of Yunxi County were enthusiastic in pig procurement work. The county procured some 15,000 pigs in October and November, which exceeded the total number procured in the past 9 months. The cadres and peasants of Zigui County adopted appropriate measures and fulfilled the procurement quota 28 days ahead of schdule. [HK180328 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 9 Dec 81]

PREFECTURE BUMPER HARVEST--Huangguang prefecture reaped a bumper agricultural harvest this year. The total output of grain from the prefecture increased by 100 percent over the same period last year. cotton increased by 6 percent and oil-bearing crops by 36 percent. The output of silkworm cocoons, tea, tobacco and fish have all increased, and the peasants have increased their income by a large degree. On average, every peasant has an income of over 100 yuan. Apart from their income from household sideline production, their income have increased by 40 yuan over last year. Since the beginning of this year, the party organizations at all levels have implemented the policies and principles stipulated at the 3d plenary session of the 11lth Centra Committee and continued eliminating the leftist influence, as well as setting up production responsibility systems. Eighty percent of the production teams have practiced various kinds of production responsibility systems and contract systems. By so doing, the peasants' enthusiasm has been enhanced. At present, the peasants are promoting the use of fine breeds and popularizing new technologies so as to strive for a bumper harvest in the coming year. [HK180328 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 9 Dec 81]

HYBRID RICE HARVEST--The 1,131,000 mu of hybrid paddy rice fields in the Hubei Province provided an unprecedented bumper harvest this year. Of the 646,000 mu of hybrid intermediate paddy ricefields, the average yield per mu was 847 jin, and of the 485,000 mu of hybrid late paddy rice fields, the average yield per mu was 640 jin. In 1981, there were eight counties and prefectures that had areas planted with hybrid rice exceeding 50,000 mu and more than 20 communes had areas exceeding 10,000 mu. Despite the disasters brought about by the drought to intermediate rice and by the autumn cold dew wind to the late rice, the situation of the hybrid rice is excellent because all localities have strengthened leadership and promoted scientific cultivation. The average yield per mu of hybrid intermediate and late rice was 117 and 190 jin respectively over that of nonhybrid rice. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 28 Nov 81 HK]

FOOD OIL PRODUCTION--This year, on average each person throughout Hubei Province has produced eight jin of edible oil, exceeding the national average level by more than 1 jin. The total output of oil-bearing crops in the province this year is expected to reach 7.1 million dan, an increase of some 600,000 dan over that in 1979, and 3 million dan over that in 1980. Most of the areas in the province have produced oil sufficient for their own consumption. However, many of these places have also taken the state's interest into account and have overfulfilled the annual oil procurement quotas. As of 20 October, the province had already procured 1.01 million dan of edible oil, accounting for 83.4 percent of the annual procurement quota and an increase of 500,000 dan over the corresponding period last year. [Wuhan Hubei Provincial Service in Mandarin 1100 GMT 26 Nov 81 HK]

CSO: 4007/130

BRIEFS

HUNAN PROCURES TANGERINES--By 23 November, Hunan Province had procured some 627,000 dan of tangerines, 160,000 dan more than the total number of tangerines procured in 1980, overfulfilling the procurement quota for this year. The province reaped a bumper tangerine harvest this year. Total output this year was 30 to 40 percent more than last year. Output of Shaoyang, Yiyang, Lianyuan, Lingling, Hengyang and Huaihua prefectures was some 100,000 dan each. [HK031504 Changsha Hunan Provincial Service in Mandarin 1100 GMT 30 Nov 81 HK]

PROCUREMENT CIRCULAR--The Hunan Provincial People's Government recently issued a circular, demanding that all places do well in purchasing and selling pigs, fresh eggs and fresh fish in 1982 to ensure sufficient supplies in markets at home and abroad. The circular announces that the state purchase price for pigs remains unchanged. The circular demands that while doing well in purchase and sales, all places pay close attention to supporting commune and brigade collectives and commune members in developing rabbit, poultry and fish production. [HK031504 Changsha Hunan Provincial Service in Mandarin 2310 GMT 29 Nov 81 HK]

VEGETABLE SUPPLY CONFERENCE--Hunan Province recently conducted a conference on vegetable supply and decided to change the present vegetable supply method and link the supply of vegetables with that of grain in order to ease the shortage of vegetables. This vegetable supply conference was conducted by the provincial CCP committee and the provincial people's government. According to a responsible comrade who attended the work conference: the situation of vegetable supply in the province in the past few years has not been very stable. In the past, the vegetable farmers enjoyed the same grain ration regardless of the amount of vegetables they sold to the state. Now, the grain ration is calculated in accordance with the amount of vegetables that they sell to the state, thus arousing their enthusiasm for growing more vegetables. The peasants will be given bonus grain on top of the basic amount of grain if they overfulfill their production quotas. The conference also studied other related questions such as management of vegetable prices, implementation of vegetable production responsibility systems, carrying out of scientific and research work and so on. [HK021406 Changsha Hunan Provincial Service in Mandarin 1100 GMT 24 Nov 81 HK]

CSO: 4007/130

BRIEFS

XUZHOU PREFECTURE OUTPUT INCREASE--Nanjing, 8 Dec (XINHUA)--Profound changes have taken place in Jiangsu's Xuzhou Prefecture where farm output used to be low due to natural disasters. The prefecture's total grain output this year reached 7 billion jin, exceeding the peak year of 1980 by 400 million jin. The prefecture has produced 2.53 billion jin more grain since 1978, showing an increase of 630 million jin annually. Meanwhile, cotton output has been increased by an average of 56,000 dan annually over the past 4 years. Collective income of each commune member has also been increased from 54 yuan in 1977 to 110 yuan this year. [Beijing XINHUA Domestic Service in Chinese 0724 GMT 8 Dec 81]

CSO: 4007/130

DEPUTIES DISCUSS PREMIER ZHAO'S NPC REPORT

OW101341 Beijing XINHUA Domestic Service in Chinese 0700 GMT 8 Dec 81

[Excerpts] Beijing, 8 Dec (XINHUA)--The Jilin provincial delegation attending the fourth session of the Fifth NPC discussed Premier Zhao's report on the work of the government.

They held: The 6th plenary session of the 11th CCP Central Committee politically unified the understanding of the whole party, the whole army and the people throughout the country. The current NPC meeting has followed it up so as to have unified our economic action and set clear and firm economic objectives. It is of great significance.

During the discussion, the deputies regarded the basic balance of China's revenue and expenditure as a concentrated manifestation of the good current economic situation.

Liu Kejing, Cai Fulin, Guo Shuzhen and other deputies said: The balance fully shows the correctness of the policy decision made by the party Central Commmittee and the State Council. It shows the correctness of the guiding thought for the economic readjustment. It also shows the superiority of the socialist system in China.

During the discussion, the deputies happily reviewed the excellent situation of Jilin Province.

They held: The excellent economic situation in Jilin Province is shown in three respects. First are the all-round bumper agricultural harvests which may possibly reach an all time high. The total grain output will be between 18 billion jin and 18.5 billion jin, surpassing the past peak output in 1978. The province also reaped good harvests of cash crops such as oil-bearing crops, sugar beets and vegetables. Next are the preliminary achievements made in industrial readjustment. Seventy-six light and textile industrial projects will be put into operation at the end of the year and it is estimated that their 1982 output value will exceed 500 million yuan. They will thus create a favorable condition for Jilin's industrial production next year. The third aspect is the new improvement of the people's livelihood in the province. The average per capital bank saving among the peasants is 60 yuan while that among the people in both urban and rural areas is around 100 yuan.

CSO: 4007/130

BRIEFS

GRAIN OUTPUT--Lishu County's total grain output is expected to be 1.45 billion jin in 1981, an increase of 250 million jin or a 20 percent increase over 1980. By 13 December, this county had procured 801.9 million jin of commodity grain, accounting for 15.1 percent of the province's total commodity grain procured. This county now is marketing surplus grain. [SK140242 Changchun Jilin Provincial Service in Mandarin 2200 GMT 13 Dec 81 SK]

GRAIN OUTPUT--As of 14 December, Huaide County, Jilin Province, had handed over 728 million jin of grain to the state, overfulfilling the annual grain procurement target by 138 million jin. This year's grain output totals 1.5 billion jin, an increase of 20 percent over 1980. [SK170708 Changchun Jilin Provincial Service in Mandarin 1100 GMT 15 Dec 81]

CSO: 4007/134

BRIEFS

SOYBEAN OUTPUT--Kaiyuan County, Liaoning Province, has increased its soybean output in the past 4 years. The 1981 per-mu-yield was 305 jin, a 50-jin increase over the 1980 figure. [SK132158 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 12 Dec 81 SK]

COUNTY-LEVEL AGRICULTURE--Grain output, sideline production and commune- and brigade-run industrial income have increased this year in Haicheng County, Liaoning Province. The 1981 agricultural output value totals 255 million yuan, an increase of 42.5 percent of 1978. The industrial output value of commune- and brigade-run enterprises has increased 110 percent, and the output value of diversified economy has increased 75 percent over 1978. Output value of commune- and brigade-run enterprises and of diversified economy has surpassed the agricultural output value by 14 percent. Per capita income of collectives and individuals has increased from 170 yuan in 1978 to 300 yuan. [SK190730 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 18 Dec 81]

CSO: 4007/134

BRIEFS

GRAIN PROCUREMENT--Tongliao County, Nei Monggol Region, has reaped a bumper harvest of grain and oil-bearing crops this year. It is estimated that the grain output of this county will reach 530 million jin. As of 8 December, Tongliao County had procured 181.63 million jin of grain and 16.8 million jin of oil-bearing crops. Among the grain procured, 94 percent are of best or second best quality. [SK180906 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 17 Dec 81]

LIVESTOCK PROCUREMENT--According to statistics compiled in early December, Ulan Qab League had procured 165,000 head of cattle and sheep, overfulfilling the procurement plan for 1981. The league has shipped 1,000 tons of beef and mutton to urban areas, 120 tons above the plan. [SK170700 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 16 Dec 81]

GRAIN OUTPUT--As of 13 December, Jirem League, Nei Monggol Region, put in storage some 451.35 million jin of grain, overfulfilling the annual grain procurement target by 1.35 million jin. Jirem League also put in storage some 96.1 million jin of oil-bearing crops--a record. Grain output for the league reached 2.2 billion, an increase of 30 percent over 1980. Output of oil-bearing crops reached 100 million jin, double that in 1980. In addition, Jirem League marketed 36.07 million jin of food grains other than wheat and rice. [SK170706 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 15 Dec 81]

XINGAN LEAGUE AGRICULTURE--The 1981 grain output of Xingan League, Nei Monggol Region, has reached some 800 million jin. The number of livestock has reached 2.04 million head. The number of livestock for personal needs has increased to 850,000 head from 580,000 head in 1980. Per capita income of peasants and herdsmen in this league has reached 200 yuan, an increase of 120 yuan over 1980. [SK170706 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 15 Dec 81]

SNOWFALL REPORTED--Ulanqab League, Nei Monggol Autonomous Region, has been plagued by snowfall since the beginning of October. About 40 percent of its grazing land is covered with snow, and its 600,000 head of livestock are having trouble searching for fodder grass. [SK112224 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 10 Dec 81 SK]

AFFORESTATION PROJECTS--Ulanqab League, Nei Monggol Autonomous Region, has successfully fulfilled the 1981 afforestation plan. The league has planted 828,300 mu of trees and 12.36 million trees on the fringes of villages and by the side of roads, lakes, ponds and houses. It has also breeded 11,300 mu of saplings. [SK122244 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 11 Dec 81 SK]

CSO: 4007/130

QINGHAI DEPUTIES DISCUSS ZHAO'S NPC REPORT

OW101233 Beijing XINHUA Domestic Service in Chinese 1425 GMT 7 Dec 81

[Text] Beijing, 7 Dec (XINHUA)--The Qinghai provincial delegation earnestly discussed Premier Zhao Ziyang's report on the government's work. The deputies unanimously pointed out that Premier Zhao's report penetratingly analyzed the current economic situation, set forth specific principles for future economic construction and explicitly outlined the prospects for China's economic advance.

In light of the actual conditions in each locality and department, many deputies spoke glowingly of the excellent situation in Qinghai. Deputy Duo Ba said: The situation in Qinghai's minority nationality areas is also excellent. Especially since the implementation of the party's policies toward the pastoral areas and the settlement of problems left over by history, relations among nationalities have improved, the party's prestige has been further enhanced, the cadres have maintained closer ties with the masses and the minority nationalities' mental outlook has undergone penetrating changes and their production has been further promoted. For example, although the weather was not as good as last year, Golog Tibetan autonomous prefecture this year has had a lower livestock mortality rate and higher survival rate of young animals than last year, and it produced nearly the same amount of grain as last year. Per-capita livestock for the herdsmen is 47 head for the whole prefecture and 150 head for Madoi County. The per-capita income for the herdsmen is 280 yuan in the prefecture and 472 yuan in Madoi County, where the income of four commune households has exceeded 10,000 yuan. This excellent situation has indeed never been seen in past years.

Deputy Han Fucai said: As in the whole country, the political and economic situation in Qinghai has continued to improve. Despite serious drought, frost, hail, waterlogging and other natural calamities this year, which affected about 30 percent of the total area of Qinghai's grain and oil-bearing crops, the total output of grain and oil-bearing crops is expected to be at least the same as 1979 due to the elimination of the "leftist" influence and the implementation of the party's rural economic policies formulated since the convening of the 3d plenary session of the 11th CCP Central Committee, which have harnessed the enthusiasm of the masses of commune members. Despite

serious natural disasters this year, the situation in the rural areas is good and the people are feeling reassured. It is another good year for animal husbandry production. Industrial production has made some progress during the readjustment. Because of the reduction in the scale of the capital construction front, the construction of major engineering projects has been expedited. There are plenty of supplies in the market and the commodity price is basically stable. The commune members' purchasing power has increased. The living standards of the people in both rural and urban areas have been further elevated. Relations among nationalities have improved, thereby consolidating and developing the political situation characterized by stability and unity.

Dong Tianzhen and other deputies pointed out: Our achievements have been made possible because the people of the whole province have earnestly implemented the line, principles and policies formulated since the convening of the 3d plenary session of the 11th CCP Central Committee. From now on we will resolutely implement the 10 principles for economic construction put forward by Premier Zhao in order to do better work in Qinghai. Deputy Shi Wenshan said: The basic balance in revenues and expenditures we have achieved in 1981 is extraordinary. However, this achievement has been made through the reduction of expenditures and is, as Premier Zhao Ziyang pointed out in the report, "not solid." We must remain sober-minded in continuing this arduous work.

Deputy Dong Tianzhen said: The commodity price problem concerns the vital interests of the people of the whole country and should never be neglected. It is a fact that the market commodity price is basically stable. However, the masses of people have been worried that, in the wake of the recent price hike of tobacco and wine, the price of some other goods will also rise, affecting the people's livelihood. Therefore, the market commodity price should be strictly brought under control.

CSO: 4007/130

BRIEFS

DRAFT ANIMAL REARING--Since the 3d plenary session of the 11th CCP Central Committee, Shaanxi Province has promoted rearing of draft animals. In 1980, some 2.47 million draft animals were reared, an increase of 0.9 percent over 1979. According to incomplete statistics this year, as of the end of June, the number of draft animals reared had already exceeded the total number of draft animals reared throughout last year. The province has also done a good job of animal husbandry. [HK031324 Xian Shaanxi Provincial Service in Mandarin 1130 GMT 26 Nov 81]

INDUSTRIAL CROP PRODUCTION--Shaanxi Province's output of industrial crops, including flue-cured tobacco, silkworms, tea, beet and fruit, this year exceeds that of last year. Output of silkworms is some 66,000 dan and output of applies may reach about 250 million jin. They are production records since liberation. The quantity of flue-cured tobacco procured may reach about 220,000 dan, double that of last year. Output of tea may reach 30,000 dan, more than in any one of the past approximately 10 years. [HK031324 Xian Shaanxi Provincial Service in Mandarin 0500 GMT 29 Nov 81]

AGRICULTURAL PRODUCTION, Xian, 30 Nov (XINHUA)--This year Shaanxi Province reaped a bumper harvest of summer grain, but subsequent serious floods and waterlogging resulted in reduction in autumn grain and cotton output. This year's total grain output is about the same as last year, but, thanks to the fairly big progress in diversified economy, the province's total agricultural output value is expected to reach 3.66 billion yuan, topping 1980 by 3 percent. This year, the province produced 3,312,000 dan of oil-bearing crops, a 50-percent increase from last year that made the province self-sufficient in edible oil; 220,000 dan of cured tobacco, an 80-percent increase; and 350,000 dan of sugar beets, a 3.5-percent increase. The total weight of hogs procured in the province reached 200,000 dun, topping last year by 20 percent. From January to October, the province procured more than 1,015 million yuan worth of farm and sidelines produce, topping the same period last year by 23.4 percent. [OW051421 Beijing XINHUA Domestic Service in Chinese 0201 GMT 30 Nov 81]

CSO: 4007/134

WILD PLANTS COLLECTED IN ABUNDANCE IN TWO COUNTIES

Jinan DAZHONG RIBAO in Chinese 12 Oct 81 p 1

[Article: "Jiyang and Lijin 'Minor Autumn Harvests' Realize Big Achievements"]

[Text] Jiyang County mobilized the masses and widely launched "minor autumn harvest" activities while carrying out autumn harvests and autumn planting.

This county is situated in the northern plain of Shandong, and wildlife resources are rich. To carry out the "minor autumn harvest" well, they established these regulations: All wild plants that have concentrated resources and are suitable for collective management are to be organized and gathered by the collectives according to their jurisdiction. Resources that are scattered and are unsuitable for collective gathering are to be gathered by commune members, and the income realized will belong to the commune members. The price of wild plant products submitted and sold to the state by commune members is subject to negotiation, and awards and sales will be realized in time. The supply and marketing and commercial departments have established over 600 procurement points throughout the county, according to the demands of the masses, to procure the products in time and ship them in time. Up to 14 September, the whole county had gathered 1.5 million jin of cornhusks, 15 million jin of feed grasses, 15.4 million jin of reeds and cattails, 21 million jin of various types of trumpet creepers, 100,000 jin of various types of wild herbs, and 400,000 jin of straw, with a total value of over 5 million yuan--an increase of 69 percent over the same period last year.

In launching "minor autumn harvest" activities, Lijin County organized the masses to gather resources in the waste lowlands. At present, the whole county has gathered 1.86 million jin of wild cytisus beans (ji dou), wild red beans, yellow alfalfa seeds, 13 million jin of cattails, 16,000 jin of cattail wool, over 46 million jin of white willow tree twigs and red chaste tree branches, and over 230,000 jin of various wild medicinal herbs and wild oil-bearing plants.

Lijin County is situated in the lowermost reaches of the Huanghe, and the area of waste lowland is large. This year, the county relaxed its policy, abolished the unreasonable procedure of past years regarding entering the lowlands, allowed collectives and commune members to handle the gathered products individually, and mobilized the enthusiasm of the masses.

9296
CSO: 4007/83

BRIEFS

FARMLAND CAPITAL CONSTRUCTION--Various localities throughout Shandong Province are undertaking small water conservation projects. Some 4.15 million people are undertaking 64,000 water projects of all kinds, of which 36,200 have been completed and are playing a significant role in winter irrigation of wheatfields. [SK101122 Jinan Shandong Provincial Service in Mandarin 2300 GMT 9 Dec 81 SK]

CSO: 4007/130

NEED TO RECLAIM COASTAL AREAS FOR FARMLAND STRESSED

Conditions Are Favorable

Shanghai WEN HUI BAO in Chinese 18 Oct 81 p 1

["Article by reporter Yu Peihua [0060 3099 5478]: "Seeking Land From the Sea To Increase the Area of Farmland; Water Conservancy Bureau Expert Suggests the Use of Favorable Conditions in Shanghai To Hasten Encirclement of the Sea to Create Land"]

[Text] The deputy chief engineer of the Shanghai Municipal Water Conservancy Bureau, Wang Zhenzhong [3769 2182 0022], told this reporter: Hastening the steps of encircling the sea to create farmland and to expand the area of cultivated land and increase new capabilities for agricultural production are an important way to treat the "expansion disease" in Shanghai.

Wang Zhenzhong said Shanghai is a "shell." The urban population has already reached saturation. It is not necessary to talk about living area; even the per capita average of roads in Shanghai is only 2 meters. In the future, the construction task of building over 2 million square meters of housing a year (1 mu is about the space for building 600 square meters of housing) must be completed. With the addition of industrial development and traffic improvements, it is unavoidable for the city to take up some suburban land. In addition, the suburban population has already increased from 3.2 million at the time of liberation to 5.4 million, and in the next 10 years this may increase by several tens of thousands more. This requires the suburban area to continue to increase the yield of food grains. At the same time, each person in the city must be assured of having 3 li of vegetable patches a year to supplement the shortage of over 300 million jin of feed. The shortage of land is very acute. For Shanghai to solve the "expansion" of the city and to enable the suburban area to supply more agricultural and sideline products to the city, where will the cultivated land come from? Encircling the sea to create land is one way.

Wang Zhenzhong said Shanghai has the conditions and the experience in encircling the sea to create fields. In the past 32 years, Shanghai has encircled the sea to create about 800,000 mu of farmland, established 15 state-run farms, 3 farms operated by troops, 1 superior variety farm, and 4 people's communes. It also has built a large industrial base as large as the main Shanghai Petrochemical Plant, and has realized definite achievements. Now, the Changjiang brings down about 500 million tons of mud and sand each year; part of it goes out to sea, while the remainder settles at the mouth of the Changjiang. This is one of the material conditions for encircling

the sea to create farmland. In addition, Shanghai has several million tons of garbage each year that can be utilized. We also have accumulated experience in stimulating silting to create farmland and combine engineering measures and planting measures, to build spur dikes, longitudinal dikes, and vertical dikes, and to plant reeds in a big way so as to hasten the silting.

Wang Zhenzhong pointed out that the world's present industrially developed nations which have little cultivated land, such as Japan and the Netherlands, long ago looked to the sea for land. They spent manpower and materials and invested in land along the coast 10 meters to 20 meters below the surface of the water. Given our nation's situation, it is not possible to do the same as Japan and the Netherlands. But in Shanghai, the area of coastal beaches greater than 5 meters below water is 3.01 million mu, while there are 900,000 mu above 0 meters (sea level). We can first draw up a 10-year plan for the 900,000 mu of beaches and make a determination to appropriate capital to promote silting and create land over the 460,000 mu of sandy beaches in the eastern beaches of Nanhui County and the eastern beaches and northern edge of Chongming County. By 1990, an area the size of a present county can be added, and by that time the remaining land in the suburbs will be much larger.

Wang Zhenzhong said: Encircling the sea to create farmland is a significant task that affects our offspring. For Shanghai to hasten the encirclement of the sea to create farmland requires the strengthening of the party's leadership and the establishment of a unified plan to be carried out in steps. We cannot advocate that whoever encircles the sea acquires the right of ownership, causing the emergence of "small patches" and "long strips" of fields with low gain. At the same time, each concerned department must strengthen the management of beaches. Regions that have already been sown with plants to stimulate silting are being used at present for thousands and tens of thousands of cattle to graze freely every day, because there is nobody to manage the fields. Each year in the suburbs, at least over 30,000 mu of reeds are destroyed, hindering some beaches from readily becoming fields. In the future, we must consider the ability to encircle and preserve the land and to consider economic gains.

Tuanjiesha Project Progresses

Shanghai WEN HUI BAO in Chinese 18 Oct 81 p 1

[Article: "Encircling the Sea To Create Farmland at the Mouth of the Changjiang"]

[Text] The dam at Shaoping, the first phase of the project to encircle the sea to create farmland at Tuanjiesha, in Chongming County, which began over a year ago with municipal government investment, has undergone the test of strong typhoons and extremely big floods and served to protect the beaches and banks and to slow the flow and promote silting. Through the end of September, the total amount of soil that had silted came to over 15 million cubic meters.

Tuanjiesha is situated at the mouth of the Changjiang, a waterway apart from Chongming Island. The upper reaches of the waterway join Beigang on the southern tributary of the Changjiang: the lower reaches join the sea. Since the 1970's, the flow at high tide has always remained dominant in the waterway, while the speed of the flow at low tide is only one half that at high tide. As the high-tide trenches continue to

develop, the low-tide trenches gradually shrink and the waterway gradually narrows: already there are over 15,000 mu of beaches that can be planted with reeds, basically possessing the conditions for encircling and reclaiming. From March 1979 to June of this year, the first phase of construction of the Shishaoping Dam between Chongming and Tuanjiesha was completed. According to experts of the Municipal Water Conservancy Bureau, after the entire Tuanjiesha project has been completed, Tuanjiesha will be joined with Dongwangsha to form an expanse of land. It is estimated that before 1990, 80,000 to 100,000 mu of cultivated land area will emerge before our eyes.

9296
CSO: 4007/83

ALL AROUND BUMPER HARVEST ATTRIBUTED TO READJUSTMENT

Chengdu SICHUAN RIBAO in Chinese 21 Oct 81 p 1

[Article: "Dazhu County Wins Continued All-Around Bumper Harvests; Promotes Various Kinds of Systems of Responsibility Linking Remuneration to Output and Readjusts Internal Structure of Agriculture; Industrial Output and Public Revenues Also Increased to a Fairly Large Extent Over Last Year"]

[Excerpts] This year was the sixth consecutive year of bumper harvests for Dazhu County. Industrial output and public revenues also saw all-around increases. As compared with 1980, total industrial and agricultural output value this year amounted to 316 million yuan, an 8.4 percent increase. In this total, grain output totaled 859 million jin (not including the output from 40,000 mu newly assigned to increase the sizes of private plots), for an increase of 9.6 percent. (As compared with 1975, total increased output of grain of 360 million jin during the past 6 years has meant average annual increases of 60 million jin or 12 percent.) Total earnings from collective agricultural sideline occupations amounted to 166 million yuan, an increase of 18.4 percent. Total industrial output value increased 14.6 percent. Total output value of commune and brigade enterprises increased 15.3 percent. As a result of the continued increase in agricultural and industrial production, this year's public revenues were 14.4 percent greater than last year. County reserve funds also increased correspondingly. Accompanying increased agricultural production has been an average per capita consumption grain distribution to each commune member of 680 jin, 62 jin more than last year. Average per capita distribution of income has reached 120 yuan, an 18 yuan increase over last year. Simultaneous with the expansion of production has been a decline of less than 0.002 percent in the rate of natural population increase throughout the county. In all kinds of work throughout the county, a booming scene of prosperity and ever increasing well-being has appeared.

As grain production has developed, the problem of food for the masses has been substantially solved. In order that the peasants may become prosperous as quickly as possible, following the Third Plenary Session of the 11th party Central Committee, the County CCP Committee acted on the basis of present realities to effect gradual readjustment in the internal economic structure of agriculture and the agricultural production pattern. While guaranteeing year after year increases in grain output, it has vigorously developed economic diversification, giving attention at once to both grain and cash. Since 1978, the county has devoted a total of 58,000 mu of land to the development of forestry and economic diversification, 23,000 mu of it going for development of

ramie, 7,000 mu for development of fruit trees, and 8,000 mu for development of rape, silkworm mulberry and tobacco. In addition cultivation was stopped on 20,000 mu, which was returned to forest land. The county's economic crop area amounts to 131,000 mu, or 15 percent of the collectively cultivated land. Following preliminary readjustments, striking economic results have already been attained. This year's revenues from economic diversification are predicted to be 76.27 million yuan, a 28.7 percent increase over 1980, for a per capita 88 yuan average. Earnings from economic diversification as a proportion of agricultural sideline occupation total revenues increased to 46 percent from 30 percent in 1976. As a portion of the county's average per capita distribution of earnings, earnings from economic diversification amounted to 42 yuan, or 35 percent. Most of the readjustments of the past several years have still been carried out between grain crops and economic crops and within economic crops. They have made the most of the county's advantages, and the economic benefits of vigorous development are manifest. They are also able to give impetus to key projects in overall economic development. Examples include ramie, whose production increased from 4.32 million jin in 1976 to 10 million jin; rape, which suddenly increased from 7.96 million jin in 1976 to 19 million jin; live hogs, which went from 288,000 head in pens in 1976 to 450,000 head this year. In addition, fairly great development has also taken place in tea, silkworm mulberry, citrus fruit, mushrooms, and tobacco. Because of the fairly rapid development of economic diversification, development of county-run industries and commune and brigade enterprises has been advanced; earnings of the collective and of individual commune members have increased; and local public revenues have also increased. Conversely, development of economic diversification and industrial sideline occupations have promoted further development of grain production. As a result of readjustment, despite a 7 percent reduction in the grain producing area, thanks to implementation of systems of responsibility for production, increases in the level of scientific farming, the relative large amount of funds available to production teams and commune members for the purchase of chemical fertilizer, pesticides, and farm machinery and equipment, grain production has continued to climb at a great rate. This year's total output of grain has increased 23.3 percent over what it had been prior to readjustment in 1978.

9432
CSO: 4007/106

GENERALLY IMPROVED OUTLOOK FOR RICE PRODUCTION REPORTED

Chengdu SICHUAN RIBAO in Chinese 23 Oct 81 p 1

[Article by Long Liangchu [7893 5328 2806]: "Heartening Bumper Rice Harvest in Seven Prefectures and Municipalities Including Yongchuan; Adaptation of General Methods to Local Situations in Implementation of Systems of Responsibility and Vigorous Improvement of Farming Techniques; Statistics From Yongchuan, Wanxian, Fuling, Yibin, and Daxian Prefectures and From Chongqing and Zigong Municipalities Show More Than 7 Percent Increase in Total Rice Output From 23.3 Million Mu and That an Enduringly Backward Situation in Rice Production Has Been Greatly Changed"]

[Text] The five prefectures of Yongchuan, Wanxian, Fuling, Yibin and Daxian in eastern and southern Sichuan Province, and the cities of Chongqing and Zigong have reaped heartening bumper harvests from more than 23.3 million mu, outputs totaling more than 7 percent more than last year. In Wanxian and Daxian prefectures, increases in output have been greater than 10 percent. The rice-growing area in these seven prefectures and municipalities is half the province's rice-growing area, and the increased output figures represent two-thirds of the total increased production figures for the province. Yields averaged increases of more than 40 jin per mu, a more than 40 percent increase over average increases for the province. Except for some mountainous regions of the seven prefectures and cities including Yongchuan, in most places grain production has always meant principally rice production. However, as a result of the influence of leftist ideology in guiding production in the past, plus the rather complex topography and meteorology, scientific farming levels were rather low. As a result, advantages in the production of rice could not be used to the full. For many years development was rather slow, and yields per unit of area were low.

Ever since the 11th party Central Committee meeting, all echelons of party and government leadership in these seven prefectures and municipalities have emancipated their thinking, summarized experiences, acted on the basis of existing realities, honored the desires of the masses, and have generally promoted systems of responsibility in the forms of linking output quotas to the size of workforce, fixing output quotas for individual households, and fixing work to be done with individual households. This aroused the enthusiasm of the masses. Simultaneously, all jurisdictions earnestly strengthened leadership over rice production, conscientiously summarized and promoted advanced experiences, and vigorously carried out technical training. Units concerned at the provincial level also placed the

focus of work on these areas, and on the key links in rice production, several times organizing on-site visits, exchange of experiences, and the study of measures to win increased rice yields. According to incomplete statistics from the seven prefectures and municipalities, 1.38 million people have been trained in rice technology. Farm technicians also diligently carried out experiments for high production, demonstrating and performing technical services so that technical measures for achieving increased rice yields were better implemented than in any previous year. This year the superior rice growing area of these seven prefectures and municipalities has generally increased, the hybrid rice area having expanded to 3.32 million mu. Last year, Hechuan County had only 20,000 mu of hybrid rice, but this has been expanded to 98,000 mu this year. Greater advances have been made in reform of seedling propagation. The area for sturdy seedlings with numerous tillers and the calabash gourd seedling area have been greatly increased. Seedling quality has been generally upgraded, and use of two stage propagation of hybrid rice seedlings in hothouses is done in about 70 percent of cases. The fact of bumper harvests this year in these seven prefectures and manucipalities show that the potential for increased rice yields in eastern and southern Sichuan Province is in the process of being tapped, and a great change has taken place in the backward state of production.

9432
CSO: 4007/106

SOME FALL HARVEST FIGURES GIVEN FOR TONGNAN COUNTY

Chengdu SICHUAN RIBAO in Chinese 26 Oct 81 p 1

[Article by Lai Rengang [6351 0088 0474], Zhang Zhenfang [1728 2182 5364] and Zhou Nanqing [0719 0589 3237]: "Increased Yield From Spring-Sown Grain in Tongnan County"]

[Text] Tongnan County has vigorously popularized scientific farming techniques to increase the levels of scientific farming, so in a year of especially severe flood disasters, spring sown grain output was still more than 11.35 million jin higher than last year. When output from grain sown in late autumn is added to this, the increase in output for the whole year amounts to more than 21 million jin, an increase of 3.9 percent.

While establishing various forms of a system of responsibility for production, this county also gave strict attention to the popularization of scientific farming techniques. This year the county continued to operate farm schools and radio broadcast schools on farming, training more than 2,700 people as mainstay cadres for production brigades and production teams. Twenty-four of 56 communes operated after hours agricultural technical schools, training a total of more than 75,000 cadres and masses. County agricultural department technicians and commune farm technicians set up systems of responsibility linking techniques to output in 116 individual production teams. Thus, agricultural science and technology was further popularized and increased throughout the county. Vigorous promotion by the county this year of hybrid rice won successes. Yields were from 200 to 300 jin per mu higher on large areas than from conventional rice varieties. Following an especially disastrous flood in mid-July, further liberalization of rural economic policies took place in which drowned farmland from which no harvest could be expected was parceled among the masses for the planting of a single late autumn crop or a single season winter crop. A system of the harvest belonging to whomever planted it was instituted in the use of every possible means of self-help in combating the disaster, thereby greatly reducing losses from the flood. As a result of such special measures taken in three of four communes in Yuqi District that had been severely flooded, no decline in output resulted despite the severe disaster, and grain output increased over last year by 2.67 million jin.

9432
CSO: 4007/106

GRAIN PRODUCTION, GROSS VALUE OF AGRICULTURAL OUTPUT UP

Beijing GUANGMING RIBAO in Chinese 8 Nov 81 p 1

[Article: "Relying on Policy and Relying on Science, Bumper Harvest is Realized in a Year of Severe Disaster; Sichuan's Total Agricultural Production Value Increased 3 Percent This Year"]

[Text] Reporters Zhang Yichang [1728 5065 2490] and Li Jiajie [2621 1367 2638] report: One of our nation's major food-grain producing regions, Sichuan Province, has relied on policy and relied on science to defeat the extremely severe flood disaster and has realized an agricultural bumper harvest this year. The reporters learned from the Sichuan provincial party committee's working meeting currently being held that compared to 1980, the highest level in history, the total yield of food grains this year has increased and total agricultural production value has increased 3 percent, realizing increased yields for 5 straight years.

From June to September of this year, Sichuan Province was attacked by six floods one after another, 135 counties were flooded, 17.56 million mu of agricultural crops were flooded, and 3 billion jin of food grains were lost. The several floods that occurred in Sichuan before liberation were all much smaller than this year's and several thousands and tens of thousands of farmers died of hunger then. The natural disaster that occurred in 1960 also was smaller than this year's; many people then had to go out to beg for food. Why was a bumper harvest realized this year after suffering from such serious natural disasters, and why are the farm villages prosperous and the people safe and happy? The basic reason is the implementation of the party's farm village policy. Especially after the implementation of the production responsibility system, the productive enthusiasm of the broad number of farmers and their enthusiasm for learning science and using science have been very high. When the flood waters receded, they washed the seedlings, helped the seedlings, and replenished seedlings and carried out many technical measures to clear the silt and prepare the land. Many severe disaster areas became light disaster regions and light disaster regions became regions without disaster.

Another important reason that Sichuan Province realized a bumper harvest in a year of disaster is that it successfully carried out on a trial basis the agricultural technical responsibility system. Up to the time before the transplating of paddy rice this year, over 30,000 production teams in the province's 160 counties implemented various forms of the technical responsibility system, and visible results of increased production and increased harvests were realized. Their surrounding commune brigades

further saw, through comparison, the great strength of science and technology, and from the western Sichuan plains to the eastern Sichuan hilly mountain regions, an unprecedented wave of learning science and using science by the farmers surged up, greatly hastening the popularization of agricultural techniques. The sowing area of superior varieties of paddy rice, mainly hybrid rice, throughout the province increased suddenly to 36 million mu this year, constituting 80 percent of the total area of paddy rice, and attention was paid to scientific cultivation. Because of the use of superior varieties and superior methods, the ability to resist disasters was strengthened. The average increase over last year of hybrid rice produced throughout the province was 200 jin per mu. In some disaster areas, ordinary rice-fields produced a yield of only 300 jin per mu, but hybrid rice produced a yield reaching 900 jin per mu and paddy rice produced an increased yield of 1.6 billion jin. This served importantly to increase the yield of food grains in the whole province.

Since last year, the provincial party committee has grasped the key points of techniques and measures to increase the yield of low-yield regions. In the 14 counties in southeastern Sichuan and northeastern Sichuan, the province has established 1.4 million mu of high-yield demonstration fields of paddy rice. The province has trained 1 million peasants a year to carry out demonstrations of scientific planting and realized higher yields in these fields than in conventional fields and realized marked increases in yield this year over last year. This has resulted in the popularization of agricultural techniques in the low-yielding regions. The low-yield paddy rice regions of Yibin, Peiling, and Chongqing all produced increased yields this year. The Wan County region, which had a reduced yield last year, produced an average increased yield of 100 jin per mu of paddy rice over a 2 million mu area, party replenishing the loss due to disasters.

While Sichuan Province was relying on science and technology to grasp food-grain production tightly, it also popularized advanced techniques in such economic crops as rape, cotton, oranges, silkworms, and mulberries in a big way. According to statistics, because of the development of diversification, this year the per capita average income of the farmers increased 20 percent over last year.

9296
CSO: 4007/83

BRIEFS

FLOOD DAMAGES SICHUAN CANALS--In July and August this year, the extraordinarily bid flood damaged the majority of the canals--which have a total length of some 8,000 km--in Sichuan Province. To restore transport, the province has done its utmost to repair the places which were damaged by the flood. Some 3,000 workers have taken part in repair work. At present, except for some places at Tuojiang and Wujiang which have not been completely repaired, the other canals in the province are basically open to traffic. Over the past 2 months, the freight volume on the canals has increased. [HK031332 Chengdu Sichuan Provincial Service in Mandarin 2300 GMT 30 Nov 81]

FOREST FIRE PREVENTION--Chengdu, 4 Dec (XINHUA)--Sichuan Province has made remarkable achievements in preventing forest fires. According to statistics from departments concerned, forest fires affected only 0.04 percent of the forest area in Sichuan this year. In order to develop forestry, the province has implemented the system of responsibility in forestry and set aside some 15 million mu of mountainous land as commune members' family plots. [OW051417 Beijing XINHUA Domestic Service in Chinese 0027 GMT 4 Dec 81]

HECHUAN COUNTY AGRICULTURE--Chengdu, 14 Dec (XINHUA)--This year the total grain output of Sichuan's Hechuan County, which was hit hardest by floods last July, topped last year by 3.2 percent. Its total agricultural output value increased by 2 percent. Flood water inundated more than 160,000 mu of cultivated land, accounting for 15 percent of total acreage. There was no harvest from more than 83,000 mu of grain and 34,000 mu of cash crops. The afflicted areas reduced grain output by more than 76 million jin, but the areas not hit by floods increased the output by more than 110 million jin, thus enabling the county to overfulfill grain procurement plan by 1.1 percent. [OW201321 Beijing XINHUA Domestic Service in Chinese 0028 GMT 14 Dec 81]

CSO: 4007/134

DEPUTIES EXAMINE ZHAO ZIYANG'S REPORT

OW100556 Beijing XINHUA Domestic Service in Chinese 0812 GMT 9 Dec 81

[Text] Beijing, 9 Dec (XINHUA)--The Xinjiang delegation to the Fifth NPC's fourth session has conscientiously examined and deliberated Premier Zhao Ziyang's government work report. The deputies agreed that the 10 principles for economic construction are a scientific summary of China's socialist economic practice and that they are realistic and in keeping with China's conditions.

Deputy Ismail Amat said: The 10 principles are in keeping with the conditions of China, as well as of the autonomous region. To implement these principles, it is necessary to consider Xinjiang's characteristics, integrate these principles with Xinjiang's realities, earnestly sum up the autonomous region's positive and negative experiences, further readjust the national economy by improving economic results and concentrating on the development of agriculture and animal husbandry, especially consumer goods production, reform the irrational economic structure and take a new path in economic construction that fully reflects the requirements of the 10 principles and that is suited to Xinjiang's practical situation.

Ismail Amat, He Bingxian and other deputies commonly pointed out that in Xinjiang, the only way to implement these 10 principles and considerably boost the autonomous region's economic construction is through promoting unity among nationalities. Ismail Amat maintained: to promote unity among nationalities, it is imperative to continue to implement the party's policy of regional autonomy for the nationalities in accordance with the guidelines contained in the resolution of the 6th plenary session of the 11th CCP Central Committee. It is necessary to promote unity on the basis of common progress and prosperity for all nationalities. It is necessary to pay attention to the crucial issue of unity among cadres at all levels. No cadre of Han Nationality can function without cadres of the minority nationalities and vice versa. Cadres and masses of all nationalities should establish mutual trust and respect, support, understand and closely cooperate with one another and make concerted efforts to do the work in Xinjiang well.

Ismail Amat, Tomur Dawamat, Ba Dai, Zheng Jifu, Ta-yi-er Mai-mai-ti-li and other deputies spoke glowingly of the achievements in the autonomous region's industrial and agricultural production since last year, particularly the gratifying economic

situation in the rural areas. Ismail Amat said: In agriculture, despite floods, hailstorms, wind, sandstorms and other serious natural disasters in some areas, Xinjiang still expects to yield 7,532,000,000 jin of grain this year although the sowing acreage has shrunk by 1.38 million mu. The most encouraging news is the good grain harvest in southern Xinjiang which has increased summer grain output by more than 130 million jin. This has basically changed the difficult situation of having to deliver grain from northern to southern Xinjiang. Total cotton output stands at 2,073,000 dan, topping last year by 30.9 percent. The number of animals in stock at yearend is 27.5 million head, topping last year by 2.9 percent. Per capita income of peasants and herdsmen derived from the collectives may increase to 113 yuan this year from last year's 107 yuan. A prosperous scene prevails throughout the farming and pastoral areas. Xinjiang will turn out 3.6 billion yuan in terms of total industrial output value, topping last year by 3.18 percent. In terms of output value, the proportion of light industry to industry as a whole has expanded to 44.44 percent from last year's 43.28 percent.

Deputy Tomur Dawamat said: After reaping a bumper agricultural harvest and scoring good gains in animal husbandry for 3 years running, Xinjiang has again reaped an all-round bumper harvest this year. With the development of agriculture and animal husbandry, a new problem has cropped up, that is, the channels of circulation are incapable of meeting the needs of production development. Now our autonomous region has grain in rural areas, but the food departments do not have enough money to purchase all the grain and deliver it to other places. Basic level cadres and peasants have complained about this matter. This year, Xinjiang reaped a bumper cotton harvest with total output exceeding 2 million dan. At present 1.56 million dan of cotton has been procured, but most is stockpiled because of failure to make prompt delivery. More than 500,000 dan of the stockpiled cotton is of long, fine fibre. A monthly interest of 1.4 million yuan has to be paid on the stockpiled cotton. Since the supply and marketing cooperatives cannot afford this amount, Aksu Prefecture and Bayingolian Autonomous Prefecture have stopped procuring cotton, thereby affecting cotton farmers' enthusiasm for production. The number of animals has increased year after year, but the procurement target is limited. Xinjiang's finance cannot subsidize the procurement of meat in excess of quota. This has resulted in unmarketable cattle, sheep and horses in pastoral areas. Readjusting the commercial policy and providing smooth channels of circulation have now become an urgent issue in promoting agriculture and animal husbandry.

The deputies made suggestions in their speeches. Some deputies said: In agriculture, there is a policy of fixing a quota, sticking to it for 5 years without change, and of rewarding peasants who sell surplus grain. The state should work out related policies, like those in agriculture, to encourage the development of animal husbandry. It is necessary to formulate grassland law to protect grazing ground and safeguard the herdsmen's self-decision right toward grazing ground.

Deputy Zhang Suiwang said: The relatively slow progress in animal husbandry compared with agriculture is due to poor capital construction. The stockbreeding machinery has remained unchanged for decades. Xinjiang has great potential for

developing animal husbandry if it would only improve its grazing grounds, gradually plant good forage grass and popularize the use of stockbreeding machinery.

Deputy Hu Bing said: Xinjiang has a very rich coal deposit but spontaneous combustion of buried coal is very serious. Some 100-200 million dun of coal have been burnt through self-combustion. We suggest that the state invest some money in solving the problem of self-combustion of buried coal to protect the nation's resources.

Zhang Suiwang, He Bingxian, He Fengjin and other deputies said: In implementing responsibility systems in factories, it is necessary to pay special attention to strengthening labor management and revise labor protection regulations. Zhao Ziyang's report says: "For those who seriously violate labor discipline and refuse to mend their ways despite repeated admonition, the enterprise has the power to take economic or disciplinary action against them, ranging up to dismissal, according to relevant regulations." This is an essential measure, but there should be specific approaches, as well as regulations, to go with it.

CSO: 4007/130

XINJIANG MEETING NOTES SOIL DETERIORATION

HK180408 Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 17 Dec 81

[Summary] The third Xinjiang regional soil survey conference concluded in Urumqi on 15 December. The meeting stressed: It is necessary to grasp the application of the results of soil surveys, pay attention to improving soil fertility, and promote sustained growth in the region's agricultural production.

The conference held: "Soil fertility has declined everywhere in Xinjiang due to natural factors and human cultivation methods. The soil's organic quality is not high, its nourishment is insufficient, and there is imbalance between soil use and nourishment. This has already become an obstacle to developing agricultural production in the region. Improving soil fertility is therefore a problem in urgent need of solution.

The participants held: In future, while continuing to carry out soil survey work, we must get a thorough grasp of applying the fruits of these surveys, centered on improving soil fertility. We must carry out agricultural capital construction, treat alkaline land in a comprehensive way, and create the environment and conditions for improving soil fertility. We must vigorously develop green manure cultivation and add more domestic manure to improve the organic quality of the soil. It is necessary to rationalize cropping areas, grow crops according to local conditions, use chemical fertilizer and agricultural chemicals in a rational way, and prevent soil pollution. Cultivation systems should be reformed.

Leading comrades of the regional CCP Committee Wangarhn Ann Gu Jingsheng, Huang Luobin and Li Jiayu visited the representatives attending the meeting.

CSO: 4007/134

BRIEFS

WINTER LIVESTOCK PROTECTION--According to XINJIANG RIBAO, the regional animal husbandry department recently issued a notice hoping that the region will firmly establish the idea of fighting natural disasters to reap bumper crops andfurther strengthen the work of protecting livestock from natural disasters during the winter. It is particularly necessary to vigorously protect collective herds through the winter. The notice said: The herds have now been moved to their winter pastures. The general situation is good. However a number of major pastoral areas have had early and heavy snow this winter, with sudden drops in temperature. This has caused difficulties for animal husbandry. The notice says: Although the disaster that has occurred in certain pastoral areas is only partial, and the losses are not great at the moment, there are rather great latent dangers. This year the region suffered prolonged drought in summer and autumn, and in some places the animals are not as sturdy as in previous years. There is less grass cover on the pastures, which are not able to support so many animals as previously. A number of places have reserved little winter feed for collective herds. According to the meteorological departments, the temperature in Xinjiang this winter will be slightly lower than last year. This requires that we be extra vigilant and make still greater efforts to protect the livestock from natural disasters during winter. We must certainly not take lightly the danger of possible blizzards. [Excerpt] [HK210805 Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 20 Dec 81]

CSO: 4007/134

TOBACCO-PROCUREMENT TARGET MET AHEAD OF SCHEDULE

Kunming YUNNAN RIBAO in Chinese 21 Oct 81 p 1

["This Year's Flue-cured Tobacco Procurement Plan for the Whole Province Has Been Completed With a Surplus"]

[Text] As of the first 10 days of October, the entire year's procurement plan of our province's major economic crop, flue-cured tobacco, had been completed early, with a surplus.

This year, after the various economic policies of farm villages were thoroughly implemented, the productive enthusiasm of the masses of each tobacco-producing region was high, they planted finely, toasted conscientiously and actively submitted tobacco for sale. The supply and marketing department added two procurement network points in time, strengthend the procurement force, and hastened the progress of procurement. Up through the first 10 days of October, 2.15 million dan of flue-cured tobacco had already been procured, completing the plan for the year by 102.4 percent--an increase of 70.2 percent over the same period last year. The two prefectures of Qujing and Yuxi and Dali Prefecture, which are major flue-cured tobacco-producing regions, all completed the annual plan with a surplus. The quality of tobacco also improved.

9296
CSO: 4007/83

NPC DEPUTY DISCUSSES PROTECTING YUNNAN'S RESOURCES

OW131435 Beijing XINHUA Domestic Service in Chinese 1325 GMT 12 Dec 81

[Text] Beijing, 12 Dec (XINHUA)--Speaking at the panel discussion of the fourth session of the Fifth NPC, deputy Wang Ruoshui called for effectively protecting Xishuangbanna's forestry resources [in Yunnan].

Deputy Wang Ruoshui said: It is necessary to pay close attention to planting trees, as well as protecting existing forests. When I accompanied some foreign guests on a visit to Xishuangbanna last May, I was very saddened to see many bare mountains there. As early as 20 years ago, Premier Zhou had warned us of this problem. He said: Xishuangbanna is a beautiful and richly endowed land. Destroying its forests will cause serious soil erosion and turn the land into a desert, bringing about consequences dreadful to contemplate. Should this happen, the communist party member will be condemned by history and future generations.

This problem was brought up at every NPC session in recent years. The NPC Standing Committee adopted the "Forestry Law (trial)." Despite the visits and suggestions made by party and government leaders, decisions and documents circulated by the party Central Committee and State Council, and the newspapers' repeated appeals for attention to this problem, it has become increasingly serious. Comrade of the Xishuangbanna Forestry Bureau told me: When the "Forestry Law (trial)" was just promulgated, the situation improved for a while. But the problem became serious again in the past 2 years. A total of 130,000 mu of forests were destroyed last year and the figure is even higher this year. The climate in Xishuangbanna now is distinctly not as good as in the past.

The problem concerning the destruction of forests in Xishuangbanna is very complicated. It involves many factors, questions concerning the policy and principles, and relations between several departments and cannot be solved by the locality alone. RENMIN RIBAO published an article last May, entitled "Why the Fire of Forest Destruction Keeps Burning More and More Furiously." A meeting of prefectural and municipal party secretaries called by the Yunnan Provincial CCP Committee discussed this problem and mapped out several measures which were later published in the newspapers. But, has the problem been really solved? We have yet to take a look. It is hoped that the State Council will tackle this problem earnestly, systematically and through to the end.

CSO: 4007/130

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TITLE: "Climate and Cotton Production in Liaoning"

SOURCE: Dalian LIAONING NONGYE KEXUE [LIAONING AGRICULTURAL SCIENCES] in Chinese No 5, 15 Oct 81 pp 1-5

ABSTRACT: The area of cotton in Liaoning Province had been gradually extended from the south to the north and by the 60's the unit yield was 3-4 times higher than that of the early liberation days. In the 70's, the yield had a tendency to drop, especially in the low temperature year of 1976. Whether the province is suitable for cotton development had by then become a problem debated among scientists. This paper analyzes the major climatic factors and presents the correlation coefficients of accumulated temperature, daylight hours, precipitation, and aridity index. The province is then divided into regions according to the climatic conditions during the growth and developmental period of cotton. The paper concludes that in the province, areas suitable for cotton production are limited, being a border region for cotton culture in China. Reasonable crop arrangement is the strategic measure for overcoming low temperature damage in order to obtain relatively stable productions.

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TITLE: "Survey of Wild Soybean Resources of Liaoning Province: I"

SOURCE: Dalian LIAONING NONGYE KEXUE [LIAONING AGRICULTURAL SCIENCES] in Chinese No 5, 15 Oct 81 pp 6-9

ABSTRACT: Wild soybean (Glycine soja) is a wild plant closely related to the cultivated soybean (Glycine max) and the semi-wild soybean (Glycine gracilic) lies between the two. Through prolonged natural selection, the wild soybean is highly adapted to a given environmental condition and its contents of protein and certain amino acids are often higher. In recent years, varieties of wild and semi-wild soybean have been regarded as vital resources and several high yield and disease-resistant breeds have been produced using them as parent or parents. In 1980, the authors carried out a thorough survey of 6 natural ecological regions of Liaoning Province, involving 32 counties and 1 prefecture and collected 518 specimens of plants, 493 seeds, and 243 root tuber bacteria specimens of wild soybean. The distribution, growth environment, biological characteristics, ecological types, and protein and amino acid contents of wild soybean of the province are discussed. The authors also discovered 9 new types of wild soybean. They will be reported in another paper.

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TITLE: "A Study on the Yield Increase Factors of Ground Film Cover Technique of Peanut Cultivation"

SOURCE: Dalian LIAONING NONGYE KEXUE [LIAONING AGRICULTURAL SCIENCES] in Chinese No 5, 15 Oct 81 pp 35-40

ABSTRACT: Using a plastic film ground cover to cultivate peanuts can increase the yield obviously. In 1979-80 an experiment is carried out to study the major reasons for the yield increase and the relationship between growth and development and the formation of yield. The experimental crops are planted in 3 stages of 15, 25 Apr and 5 May, and plots without film cover are planted on the same dates to serve as the control. Compared with the control the yield increase of pods is 20.62-48.68 percent, the increase of seeds (shelled peanuts) is 31.7-63.15 percent. Such factors as the change in the soil environment, the improvement in temperature, light, air, and heat conditions, the favorable colony structure, the improvement in soil physical and chemical properties and in the decomposition of organic fertilizer, the increased efficiency of the nutritional organs, and the increased accumulation of assimilated materials, contributing to the yield increase of the film covered plots are analyzed.
6248
CSO: 4009/161

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TITLE: "Analysis of Large Area High Yield Technique for Preparing Seeds of Hybrid Rice"

SOURCE: Guangzhou GUANGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 6, 8 Nov 81 pp 4-8

ABSTRACT: Gaozhou County began to prepare hybrid rice seeds in 1975. By 1980, it was cultivating 2852.6 mu of early hybrid rice, with an average yield of 131.9 jin/mu, and 10895.7 mu of late hybrid rice, with an average yield of 114.3 jin/mu. With the goal of above 200 jin/mu of yield in mind, the paper analyzes the desired cultivation technique in the following aspects: (1) In view of the extremely great effect of the weather condition in the period 15 days before to 25 days after heading, planting dates for safe heading are given; (2) Blooming time of parents should always coincide if the planting dates of parents are calculated exactly; (3) Transplanting more seedlings of the mother may increase the number of spikes per unit area; (4) Skillful application of fertilizer and water is necessary to cultivate strong seedlings of both the mother and the father; (5) Attention should be given to some special measures to improve the hybridization fruiting rate; (6) The purity of the seeds should be strictly guaranteed and measures should be carried out to prevent mixing.

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TITLE: "Effect of Shading After Heading on The Fullness of Rice Grains Under the Condition of Different Nitrogen Levels"

SOURCE: Guangzhou GUANGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 6, 8 Nov 81 pp 12-14

ABSTRACT: In Guangdong Province, the rainy weather often reduces the quantity of solar radiation during the heading and starch-filling stages of both the early and the late rice crops. This is one of the major causes of unstable yield. In 1980, a small plot experiment was carried out for both early and late crops. Nitrogen fertilizer in quantities of 0,8,16,24 jin/mu for the early crop and 0,7,14,21 jin/mu for the late crop was applied in different plots for comparison. Mosquito netting was used to shade the sunlight partially, 49 percent for the early crop and 36 percent for the late crop, and continuously for 15 days after heading [to simulate overcast days.] Results indicate that yield reduction due to shading increases with the quantity of nitrogen application. Without shade, 14 jin of nitrogen application produces the highest yield; with shading, 7 jin of nitrogen application produces the highest yield.

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TITLE: "Utilization of Rice Pollen Plants"

SOURCE: Guangzhou GUANGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 6, 8 Nov 81 pp 15-17

ABSTRACT: Based upon several years of practice, the authors believe that although the majority of pollen plants of rice do not possess all superior characteristics simultaneously, there remain a large number of them possessing one, 2, or several superior qualities. Moreover, their properties are stable and colonies orderly and uniform. It is, therefore, possible to consider them as breed resources for direct or indirect utilization. Techniques of their utilization are discussed in the paper in the following aspects: (1) For selecting pure breeds; (2) For breeding 3 lines of hybrids; (3) For preparing hybrids using genocidal chemicals; (4) For fast hybridization of closely related parents. Some experimental data in all 4 aspects of utilization are reported. These experiments are of very short duration to date. Whether deterioration will occur in future generations remains a problem to be observed in the future.

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TITLE: "The Use of Sugar Cane Tissue Culture in the Acceleration of the Breeding Process"

SOURCE: Guangzhou GUANGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 6, 8 Nov 81 pp 17-19

ABSTRACT: With the regular breeding procedure, 8-10 years are required to breed out a superior sugar cane. If seed stem is used for asexual propagation, with 2 plantings a year, the duration can only be shortened by about 50 percent. In the past 2 years, the authors have succeeded in growing a generation every 27-56 days through continuous culture of callus tissues in a culture medium of N6 + 2.4 - D_3 mg/l, basically the same as the induction medium. With some breeds, such as Yuetang 57/423, the rate of evolvement is only 14.3 percent for the first generation, but it increases to 96 percent for the second and subsequent generations. The condition is very unstable for some other breeds, such as Taitong-134, however. Whether the vitality will deteriorate in future generations remains a subject to be studied. Special techniques employed, including rooting with activated charcoal, cultivating seedlings in a layer of mud below a layer of sand, cultivating seedlings in a nutrient dish before transplanting, etc. are discussed.

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TITLE: "Silicon Supply Level of Soils of Zhanjiang Prefecture and the Effect of Application With Powdered Coal Ash Silicon-Calcium Fertilizer"

SOURCE: Guangzhou GUANGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 6, 8 Nov 81 pp 29-31, 28

ABSTRACT: Silicon is a necessary nutrient for such crops as rice and sugar cane. In Zhanjiang Prefecture, located on the southern tip of China, rain is voluminous and concentrated and the intense washing action removes silicon and concentrates aluminum in the soil. At the same time, the major crops are rice and sugar cane. In 1980, the authors carried out an experiment in 10+ small plots to test the yield increase effect of a silicon-calcium fertilizer, made from sudden cooling and grinding of the coal ash supplied by Anhui Tongling Power Plant. In all test points, the yield increase is generally 20-60 jin/mu, amounting to 5-11 percent. Contents of SiO_2 of the soil before and after fertilizer application and of the straw at the time of harvest are reported. The paper also reports,in a separate section, the effective silicon contents of 5 different soils of the region to serve as a reference for determining the need of applying fast acting silicon fertilizer.

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TITLE: "Preliminary Report of Experimental Winter Planting of Soybean"

SOURCE: Guangzhou GUANGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 6, 8 Nov 81 pp 35-37

ABSTRACT: In some regions of Guangdong, such as Zhanjiang, Hainan, etc. there has always been a tradition of cultivating soybean in the winter, but the yield is low and unstable and areas of cultivation are small. For the purpose of utilizing the warm winter climate and the winter fallowed land the authors carried out experiments in 1979-80 to find more suitable breeds of soybean for winter planting. Of all the breeds, most are found to be capable of growing in the winter and 16 breeds are found to have better fruiting rate. The growth and development period of 4 breeds, planted on 7 different dates in the winter,is listed in a table. Technique of adjusting the planting time of winter soybean so as not to delay the transplanting time of the early rice crop and to provide a suitable temperature for the growth of soybean is discussed.

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TITLE: "Cecal Coccidia Sensitivity Test of Bailuoke [Transliteration] Breed Chickens of Different Ages"

SOURCE: Guangzhou GUANGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 6, 8 Nov 81 pp 40-42

ABSTRACT: In 1980, a survey by the authors of 5 chicken farms in Guangzhou disclosed that cecal coccidiosis occurs to chicks as young as 16 days of age. Eggs of Eimeria tenella were isolated from chick feces of the small farm of the academy and were cultured for use in the experiment. Chicks, all of the Bailuoke breed, of varying ages of 1-870 days were fed sporified eggs to determine their sensitivity. After ingesting the eggs, chicks of 2-70 days of age began to excrete pest eggs for 4-10 days in large quantities. Chicks of 160-330 days of age excreted pest eggs for as long as 16 days, in extremely small quantities every one of these days, however. Clinical symptoms of the older group of chicks were very mild. This is perhaps the reason for these chicks to be not diagnosed as suffering from cecal coccidiosis and to become, consequently, the sources of contamination of a farm. The group of chicks of 870 days of age did not develop symptoms neither did they excrete pest eggs, indicating that adult chickens are immune. Whether or not the immunity is the result of ingesting a small amount of pest eggs when these chicks were young remains to be clarified in future studies.
6248
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TITLE: "Research on High Yield Wheat Culture in Linfen Basin"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 10, 20 Oct 81 pp 2-5

ABSTRACT: The development of wheat production has been relatively fast in Linfen basin since the 70's. The average yield of some production teams has reached above 700 jin/mu while some thousand jin/mu fields have appeared. For the purpose of investigating the production potential and determining the thousand jin cultivation technique, the authors carried out field and small plot experiments in 1974-78 and the yield reached 940-990 jin/mu on the average. In 1978-80, small plot experiments were again carried out mainly to select breeds, planting time, and planting quantity of high yield culture to determine the reasonable colony structure and effective measures to increase tillers, spike formation, and weight of grains. In 1980-81, high yield experiment fields are officially established to continue the research. The special climatic condition of Linfen basin is discussed in terms of the ecological condition for wheat and its growth and development characteristics. The results of the various experiments are reported.

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TITLE: "Study on the Heredity and Interrelationship of Major Characteristics of Spiked Millet"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 10, 20 Oct 81 pp 9-11

ABSTRACT: This paper reports an experiment to cross breeds currently being extended to produce F_1 seeds in 1976 and F_2 in 1977. After ripening, 50 stalks of hybrids from each grouping and 30 stalks of parents were randomly taken for laboratory examination and calculation of the interrelationsip between general heredity and major economic characteristics. Results indicate that the yield of an individual plant, the weight of the spike, and the weight of the stalk have very obvious positive correlation in a coefficient of 0.6502-0.8629, obvious correlation in a coefficient of 0.5495-0.5331 with the length of the spike, and the correlation with the height of the stalk not very obvious. Interrelationships of other major economic characteristics of F_2 hybrids are discussed.

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TITLE: "Reasons for the Formation of Clods in Shangdang Basin and Ways of Resolving the Problem"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 10, 20 Oct 81 pp 17-18

ABSTRACT: In the spring after the thaw, 11 percent of the farm work is used in the region of Shangdang basin to crush clods on the ground surface and all that work can only reduce the number of clods. The clods left hidden just below the surface will prevent seeds from germinate to create gaps in the row of plants. Following 3 years of survey and analysis, the following are understood to be the cause of clods: (1) The soil is too wet, exceeding 22 percent of moisture, during fall plowing; (2) The soil is too dry, below 15 percent of moisture, during fall plowing; (3) The ground surface is frozen when fall plowing is too late; (4) The ground is not raked after plowing and lumps are left on the surface; (5) Stubles are not removed before the fall plowing to cause large lumps of soil to gather around the roots to form large clods. Experiments of 3 years have proved that it is entirely possible to eliminate these clods or to prevent them from being formed. The experimental procedures and their results are reported.

6248
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TITLE: "Heat Conditions and Discriminatory Analysis of Multiple Crop Index"

SOURCE: Beijing ZIXIANG [METEOROLOGICAL MONTHLY] in Chinese No 11, 10 Nov 81 pp 21-22

ABSTRACT: The heat condition of a locality not only controls its multiple crop index but also has a great effect on the yield of its crops. Even with improved agricultural technology, if the index exceeds the permissible level of the available heat energy, the yield will not increase and may drop instead. Henan Province has a complex topography with varying heat conditions and hence different multiple crop indices. Equations are introduced to calculate the maximum multiple crop index of a locality and to predict the yield, based upon the annual accumulated temperature of the area. Sample applications of the computation technique for 4 counties of the province are given. Based upon the result of computation, the paper concludes that the southern part of the province has the smallest climate-yield variation coefficient; therefore, the yield is relatively stable. In the central area of Xuchang Prefecture, the coefficient is the greatest, with 223.1°C less cumulative heat than the southern areas while the multiple crop index is just as high; therefore the yield is unstable. In the north and the west, the heat condition is poor but the multiple crop index in practice is low as well; therefore, the yield does not vary very much.

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